A Hermit's Wild Friends Or Eighteen Years In The Woods (1903)

Mason A. Walton

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A Hermit's Wild Friends Or Eighteen Years In The Woods

Mason A. Walton

A Hermit's Wild Friends

or

Eighteen Years in the Woods

By

Mason A. Walton

(The Hermit of Gloucester)

Boston

Dana Estes & Company

Publishers

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A HERMIT'S WILD FRIENDS
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THE "HERMIT" AND HIS HOME.

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To the
Lovers of Nature,
everywhere,
this volume is fraternally dedicated

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NOTE

During my eighteen years of hermit life, I claim to have discovered several new features in natural history, namely:

That the cow-bunting watches over its young, assists the foster parents in providing food, and gradually assumes full care of the young bird, and takes it to the pasture to associate with its kind; that the white-footed mouse is dumb, and communicates with its species by drumming with its toes; that the wood-thrush conducts a singing-school for the purpose of teaching its young how to sing; that the chickadee can count; that the shad-bush on Cape Ann assumes a dwarf form, and grows in patches like the low-bush blueberry, fruiting when less than a foot in height; that the red squirrel owns a farm or fruit garden, and locates his male children

on territory which he preempts for the purpose. I am aware that my claims will be vigorously assailed, but I have verified these discoveries by years of patient observation, and would say to my critics: "You would better investigate carefully before denying the probability of any one of these claims."

Thanks are due the publishers of *Forest and Stream* and *Youth's Companion* for permission to republish articles which have appeared in these respective journals.

M. A. Walton.

Gloucester, April 5, 1903.

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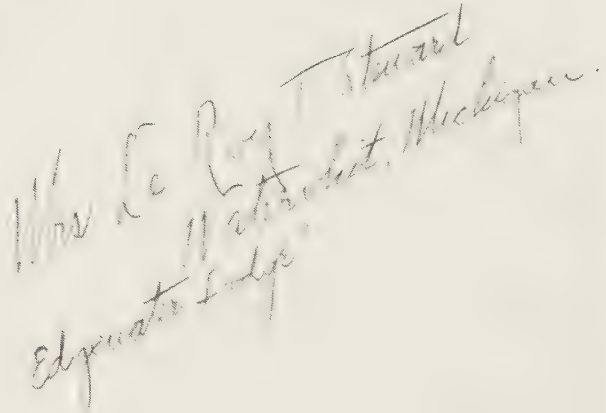

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A Hermit's Wild Friends

OR

Eighteen Years in the Woods

I.

NATURE *versus* MEDICINE

Eighteen years ago I was in sore straits. Ill health had reduced my flesh until I resembled the living skeleton of a dime show. I realized that a few months more of city life would take me beyond the living stage, and that the world would have no further use for me except to adorn some scientific laboratory.

A diagnosis of my case would read as follows:

Dyspepsia, aggravated, medicine could give but slight relief. Catarrh, malignant,

persistent. A douche was necessary every morning to relieve the severe facial pain. A cough that had worried me by day and by night, and thrived on all kinds of cough medicine. Also, my lungs were sore and the palms of my hands were hot and dry. I thought that I was fading away with consumption, but the doctors said my lungs were sound. I was advised to go into the woods and try life in a pine grove. As there was no money for the doctors in this advice, I looked upon it as kind and disinterested, but my mind ran in another direction.

When I was young and full of notions, the idea entered my head that I should like a change from fresh to salt water. It resulted in a two months' trip on a fishing schooner. During the trip I had been free from seasickness, and had gained flesh rapidly. The memory of that sea voyage haunted me, now that I had become sick and discouraged. It seemed to me that a few weeks on salt water would save my life.

With high hopes, I boarded the little

steamer that plied between Boston and Gloucester. I thought it would be an easy matter to secure board on one of the many vessels that made short trips after mackerel. For three days I haunted the wharves in vain. The "skippers," one and all, gave the same reason for refusing my offers. "We are going after fish," said they, "and cannot be bothered with a sick man." At last one "skipper" discouraged me completely. He said to me: "I once took a sick man on board, and because we did not strike fish, the fishermen called the passenger a Jonah, and made his life miserable. Three days after we returned he died, and I swore then that I never would take another sick man to sea." This "skipper's" story, and my fruitless efforts caused me to abandon the salt water cure. I turned now to the hills around Gloucester. In the end I selected Bond's Hill, because it was surrounded by pine groves.

I found the hill covered with blueberry and huckleberry bushes, the latter loaded with fruit. On the brow of the hill the soil had

been washed away, leaving great masses of bed rock (granite) towering above the cottages that clung to the base of the cliff. On the extreme brow of the hill I found a spot where the soil had gathered and maintained a grass-plot. Here I pitched my little tent. Here I lived from August to December. I called the spot the Eyrie, because it reminded me of the regions inhabited by eagles. A visit to the spot will disclose the fitness of the name.

On this spot my eighteen years of hermit life begun. At first I made it a practice to go to the city every day for one meal, bringing back food enough to last until another day. I found the huckleberries good wholesome food that did not aggravate my chronic dyspepsia.

Two weeks of outdoor life had brought a little color to my cheeks and had made me feel like a new man. About this time I awoke in the morning to remember that I had not coughed during the night. The cough that

had harassed me night and day for two years, left me then and there, never to return.

Nature was performing wonders where medicine had failed.

Before the month of September had ended, my catarrh disappeared, and I no longer had use for the douche. From that time to this, I have been free from catarrh. I do not have even the symptoms, known as hay-fever.

The dull, heavy pain that I had experienced constantly from dyspepsia, gradually sub sided and eventually ceased. Since that time I have been able to eat any kind of food, at any time, day or night, without the depressing pains of indigestion.

During my first experience, climbing Bond's Hill, on my return from the city, had been almost beyond my strength. I had to rest three times before reaching my tent. By the middle of November my strength had returned nearly to the old standard, and I mounted the hill without a thought of weariness.

Standing one day on a massive spur of

bed rock, near my tent, my thoughts went back to the statement of the doctors in relation to my lungs. I had just ascended the hill, without a long breath, and a hale, hearty feeling pervaded every fibre of my system. I knew, then, that my lungs were all right, and thanks to Nature, I had recovered my health and stood there comparatively a well man.

While I was yet weak, I passed many hours at the Eyrie, entranced by the magnificent panorama spread before me. I could see the larger part of the city of Gloucester, which extended, in a semicircle, from Riverdale to Eastern Point.

Later in the season I watched the ebb and flow of the tide on the marshes that border Annisquam River.

The Outer Harbor, with Ten Pound Island near the entrance of the Inner Harbor, lay in plain view, and the shifting scenes on its restless waters possessed a fascination which I could seldom resist.

Day after day I watched the vessels of the

fishing fleet as they rounded Eastern Point, bound outward or inward. These vessels were models of beauty, and looked as if they were built for racing instead of fishing. I often compared them with the clumsy coasters that rode at anchor in the Outer Harbor.

Now and then a vessel, homeward bound, rounded Eastern Point with her flag half-mast. Mute reminder of the hardships and perils of a fisherman's life.

Every morning soon after it had become light enough to see, several boats could be seen rowing shoreward. Usually there was only one man to a boat. It did not take me long to find out that these lone rowers coming in out of the night were fishermen that pulled their lobster-pots after one o'clock in the morning. I saw another lone fisherman sail out of the harbor every morning when there was wind enough to fill a dory sail. Day after day he sailed or rowed out to sea to fish for shore codfish. He supported a large family from the proceeds of his labor, but the life was lonely and perilous. I watched

his return once when the wind was blowing a fierce gale. The little boat would careen until the sail trailed in the water and it seemed to me that she must capsize. At the last moment she would come up into the wind and right. In this slow, dangerous manner she was worked to the mouth of Annisquam River and tied up above the Cut Bridge. The next day I asked the fisherman how he had managed to keep his boat right side up. "Oh, that was easy. When she heeled too much, I *shook her up*, and kept her from taking in water." "*Shook her up*," was a new phrase to me.

Below my Eyrie lay the little hamlet called the Cut. Some of its cottages had straggled up to the base of the cliff just below the tent.

I could look down on a long stretch of Western Avenue beginning at the Cut and ending in Ward Five, beyond the Cut Bridge. The latter was a drawbridge, and when open the city of Gloucester was on an island, with the exception of Ward Eight, which lies on the west side of Annisquam River.

I had located in Ward Eight, but at the time did not know anything in relation to its size, as compared with the other wards of the city. A glance at the map in the city directory showed me that Ward Eight was larger in area than all the other wards combined. I also found that it comprised within its limits the Cut, Fresh Water Cove, West Gloucester, and Magnolia. It pleased me much to find that it contained about twelve thousand acres of shrub land and forest.

Two-thirds of the way from the Cut to the drawbridge, Essex Avenue connects with Western Avenue. Essex Avenue crosses the marsh to West Gloucester, and is the highway into the city for Essex and other distant towns. There is a constant stream of travel over this highway, divided among farmers, icemen, and pleasure-seekers. The travel on Western Avenue is now, and was then, made up largely from the summer colonies at Magnolia and Manchester. Showy turnouts passed and repassed, so that I had enough to attract my attention from sunrise to sunset.

When facing the harbor, I could turn to the left and look across the marsh to Dogtown Common. I had to look above and beyond a straggling portion of the city. Dogtown Common, in Revolutionary days, contained forty dwellings; now it was houseless. I saw only a boulder-covered region of pasture-land, choked by huckleberry and blueberry bushes, with here and there large tangles of catbrier.

Some of the sunsets seen from the Eyrie were beautiful beyond description. Whenever a massive bank of clouds hung above the western horizon, the setting sun illuminated the city from Riverdale to Eastern Point, and every window in sight glowed like burnished gold.

Until the middle of November the weather continued mild and balmy, with but a few stormy days. I recall, with pleasure and satisfaction, the evenings passed at the Eyrie. Perched on the brow of the cliff, I studied the city by moonlight, lamplight, and gaslight. On dark nights the lights of the city took on the shape of a huge monster, half-

coiled, and extended from Riverdale to Eastern Point Light. The latter is a revolving red light, and it gave the semblance of life to the one-eyed monster which constantly blinked its great red eye. It pleased me to call this imaginary monster the sea-serpent. Gloucester owes her growth to the sea, and she might well take on the shape of the sea-serpent.

When the danger-signals were up, the Outer Harbor was crowded with craft of all kinds. At night time the tossing lights on the vessels contrasted strangely with the fixed lights on shore.

The twin lights on Thatcher's Island could be seen from the Eyrie, and I often wondered if these lights were necessary. To the middle of November I had seen the sea only in comparatively fair weather, when it was on its good behavior. Afterward a storm that wrecked my tent, and brought in its wake huge waves that thundered against the headlands of Cape Ann, caused me to wonder in another direction. It seems incredible, but it is a

fact, that I could feel the solid rock tremble beneath my tent from the shock of wave against headland, one fourth of a mile distant.

The storm died out, but it left an impression on my mind that caused me to look for a locality less exposed to the wind. I found an ideal spot on the "Old Salem Road." The spot was surrounded by wooded hills, where a little brook crept out of a swamp and crossed to the south side of the old highway. After crossing the highway, the waters of the brook went tumbling and singing down to another swamp, where they were lost in a tangle of moss, ferns, and marsh-marigolds.

The Old Salem Road had been deserted more than one hundred years, save as a wood road in winter. At one time it was the connecting link between Salem and Gloucester. Seven ruined cellars indicate the spots where dwelling-houses once stood.

I moved my tent from the Eyrie, and put it up within the limits of the old highway,

The Crow

and begun to build a little log cabin in which to spend the winter.

While in the tent I experienced zero weather, and it may be of interest to know how I managed to keep warm. I had picked up two discarded milk-cans, and these I filled with hard wood coals from a fire which I maintained near the tent. By closing the flaps of the tent the heat from the cans would keep up an even temperature through the night. If it happened to get cold toward morning I would burn a newspaper now and then, which would warm the tent until light enough to start an outdoor fire. I baked beans in a hole in the ground, in true Maine camp style. There would be coals enough under the bean-pot, in the morning, to cook coffee, and hot coffee and baked beans seemed to go to the right spot when the thermometer was hanging around zero, and one was living in a cotton tent.

I did my cooking on a bed of red hot coals, thus avoiding smoked food and the loss of coffee-pot handle or spout. Hemlock bark

from a dead tree will give the best coals in the shortest time.

By the middle of December I had moved into my log cabin. I put in a second-hand range, which proved to be an excellent baker and warmed the cabin in the coldest weather. The remainder of the winter "I was as snug as a bug in a rug," to use an old familiar adage.

Before the winter months had passed, chickadees, black snowbirds, and tree-sparrows found their way into the cabin dooryard. I fed lard to the chickadees on a chip, and the birds would eat this clear fat, at short intervals, all day, and come around the next morning none the worse for the strange diet. Certainly such food would kill any other bird. The snow-birds and sparrows were fed on different kinds of bird-seed. When I mention sparrows I do not refer to the English sparrow. I am pleased to state that this undesirable alien does not come to my dooryard. The tree-sparrow is a native bird, and here on the Cape, is seen only in winter. It comes

to us in October, and leaves by the first of April. The tree-sparrow is an interesting bird to know. It comes to us in the winter

TREE SPARROW.

when the most of our birds are in the South. It is a handsome bird from a sparrow standpoint.

The crown is a bright chestnut, and there are chestnut markings on the side of the head

and on the bend of the wing. The back is boldly streaked with black, bay, and light gray. There is much white edging to the feathers of the tail and wings in winter. A few of these birds stopped about the cabin all winter; but a flock numbering hundreds wintered on Bond's Hill. On warm days they roamed over the hill, far and near, always flying low and keeping well down in the shrubby growth. But when the weather was cold I would find them in a sheltered spot, where meadowsweet, bayberry, hardhack, blueberry, huckleberry, and sweet-fern shrubs crowded each other until their interwoven branches held a mantle of snow. Beneath this shelter the birds seemed to find food, for they were busy at all hours of the day. I passed many hours watching them while they were thus secluded. Invariably I found them chirping to each other, and by listening closely I could catch snatches of song low and sweet. The last of March their low song could be heard in the shrub-lands. Later, when the

FOX SPARROW.

song-sparrows and bluebirds swelled the chorus, the tree-sparrows silently disappeared.

April 3d, in the morning, I found a large flock of fox-sparrows in the dooryard. It is somewhat singular that for three years they appeared on the same day of the month. One year, April 3, 1887, I awoke in the morning to find three feet of snow in the dooryard, and I was obliged to shovel the snow away in order to feed the sparrows on bare ground. The fox-sparrow is two-thirds as large as a robin, and may be classed with the beautiful birds both in form and coloration. The sexes are alike. The color above is a rich rusty red, deepest and brightest on the wings, tail, and rump. The head, neck, and shoulders are a dark ash-color, more or less streaked with rusty red. Below the groundwork is snow-white, also thickly spotted with rust red. It could be called a wood-thrush by a careless observer. These birds are migrants with us, and pass through the State to their breeding-grounds in April, to return in October. It is usually six weeks from the

time the first flock appears before the loiterers are all gone. The flock that called on me was a very large one, numbering over one hundred birds. Mornings they made the woods ring with their delightful music.

BAY-WINGED BUNTING.

When the birds returned in April and May, I found that I was a trespasser on the nesting-ground of many a woodland bird. Catbirds, towhee-buntings, robins, thrushes, and numerous warblers nested around my cabin.

By this time I had settled down to hermit-

life in earnest. I had tried the experiment of "Nature *versus* Medicine," and Nature had triumphed. With good health, with strange

BLACKBIRD.

birds and flowers to study and identify, I was content to spend a portion of my rescued life in Dame Nature's company.

II.

SATAN THE RACCOON

During the early years of my hermit-life, I had caged many small animals, such as deer-mice, raccoons, woodchucks, chipmunks, flying-squirrels, stoats, mink, and red and gray squirrels.

RACCOON'S HEAD.

My first captive was an artful old coon. I caught him in a small steel trap, the jaws of which had been wound with cloth as a protection to the foot. The den was under a boulder near the cabin. I set the trap at the mouth of the den and covered it with

leaves. The next morning the trap, with clog attached, was missing. There was a trail in the dead leaves easily followed. While following the zigzag trail I was in plain sight of the coon, but he remained quiet until he found that he was discovered, then made frantic efforts to escape. The clog had anchored him securely to some witch-hazel shrubs. He was full of fight, and I had to look out for his teeth and claws. I had brought along a stout piece of duck, which I wrapped around the raccoon, trap and all; thus secure from his wicked teeth and claws, I toted him to the cabin.

It took me two hours to put a strap on his neck. The struggle was a desperate one. Without the duck it would have been a victory for the raccoon. When I had the strap securely fastened and a dog-chain attached, I removed the trap from his foot, then staked him out near the cabin. For two weeks he tried night and day to free himself from collar and chain, then suddenly appeared to be contented.

Instinct plays no part in coon lore. A coon can reason as well as the average human being. My captive proved to be as artful and wicked as Beelzebub himself.

Whenever my back was turned he would be up to all sorts of mischief. When caught red-handed he could put on a look of innocence too comical for anything. By the end of the first month he had got all of my ways of life down fine. If I went into the woods with my gun, on my return he would tear around in his cage anxious for the squirrel he had not seen, but was sure to get. When I went away without the gun, he paid no attention on my return. I do not think he was guided by scent, for sometimes the wind would not be right. Without doubt he connected the gun and squirrel in his mind, and perhaps knew more about a gun than I thought.

He did not take kindly to cage-life, although his cage was under a small pine-tree, so when I was about the cabin I chained him to the tree and let him run outside. I put

him into the cage every day before going to the city for my mail. He resented this, and would run up the pine-tree when he saw me lock the cabin-door. One day I pulled him down and whipped him while he lay prone on the ground, with his eyes covered. I took away his food and water. He must have been downright hungry before I fed him. He never forgot the lesson. After that, when he saw me lock up he would sneak into his cage, fearful, I suppose, that if found outside he would be whipped and starved. He preferred food in the order herein named: insects, eggs, birds or poultry, frogs, nuts, red squirrel, rabbit, gray squirrel, and fish. This, without doubt, was the bill of fare of his wild state. He would not touch green corn or milk until I had crushed the former into his mouth, and had dipped his nose into the latter. Afterward he would leave everything for milk.

The first rabbit I fed to him was about two-thirds grown. It was one which a mink had chased into my dooryard and killed. It was evident from the first that the coon was

no stranger to this kind of food. He opened the rabbit's mouth with his fore paws and ate out the tongue, after which he skinned the head, turning the skin back over the neck. He crushed the bones of the head and lapped out the brains. On the third day he had finished the rabbit, and the skin was turned inside out, even to the ends of the toes. Squirrels were skinned in the same manner.

This coon decided for me a disputed question. I refer to the whimper or cry of the coon. Night after night, in the nutting season, he would call to his comrades, and they would answer from the surrounding woods.

When the sweet acorns were ripe, Satan was unusually active early in the evening. At this early hour the coons were abroad in search for food, and Satan scented them, and did his best to attract their attention. One coon passed near the cabin every night and answered Satan's cries, so I imagined that it was his mate.

Many writers claim that the tremulous cry attributed to the coon is made by the little

screech-owl (*Scops asio*). It is true, doubtless, that people that do not know both cries may make such a mistake.

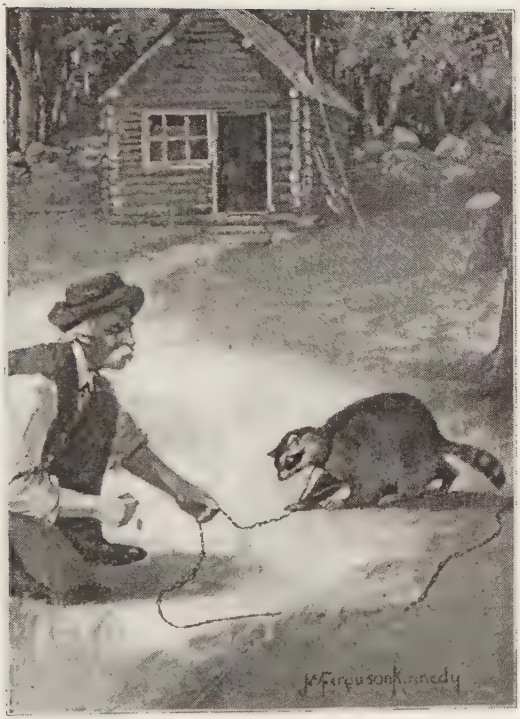
The little owls appear to resent my intrusion on their vested rights, so from early spring to late fall they haunt my sleeping-quarters, and divide their time between snapping their beaks and uttering their monotonous notes. As I sleep in the open air nine months out of the twelve, I have a good chance to study both cries, and could not mistake one for the other.

The coon is a ventriloquist. His cry seems to come down from the sky. A friend came in from the city one night to hear the coon cry. It was a moonlight night, and the coon was staked out in the dooryard. My friend was not looking when the first cry was uttered, but claimed that the sound came from the trees overhead. Afterward he saw the coon in the act, and could not make a mistake.

When Satan uttered the cry, he was always sitting on his haunches. He would throw his head up until his nose pointed skyward, then

blow the sound out between his half-closed lips.

My friend had brought in a blanket and hammock, and was prepared to spend the night in the open air. He slung his hammock near mine, and we turned in about ten o'clock. He was nervous and restless, and said he could not sleep with the little owls about him. Every fifteen or twenty minutes he would call to me to ask about some noise of the night, common enough, but which appeared strange and startling to him in the strained condition of his nerves. Soon after midnight a small animal, doubtless a stoat looking for an owl supper, dropped on to my friend's blanket. There was a smothered cry, full of fear, and a flying figure that did not stop until my hammock was reached. Nothing that I could say would induce the frightened man to go back to that hammock. He suggested at last that he would sleep in the cabin. I assented, and we soon had a bed arranged in a bunk. The cabin was overrun with white-footed mice, and I looked for more trouble. Twenty min-



"I BEGUN BY TYING ON A NUT."

utes later I heard several war-whoops, and I saw my friend tumble out of the cabin into the door-yard. "Are you awake?" cried he. "Certainly," I answered, "you don't think there is any one asleep in this county after the racket you have made, do you?" "Oh, let up with your fooling," said he, "this is a serious thing. I sleep with my mouth open; suppose one of those mice had run down my throat and choked me to death? I am going home." And home he did go. I accompanied him through the woods to Western Avenue, and returned in time to get three hours' sleep. My friend was like hundreds of other nervous people that I had known in a lifetime, who were too sensitive to enjoy a night in the open air. To be in full accord with nature one should get accustomed to the presence of a snake now and then, in the open-air bed.

Satan was an apt scholar. I taught him to pull in his chain, hand over hand, sailor-fashion. The chain was twelve feet in length. I begun by tying on a nut about two feet

from the coon. He pulled in the chain with his fore feet, which he used as hands. I would say to him, "Pull in the chain. Pull in the chain," and inside of a week he would obey the order without the use of food. I think he enjoyed the sport.

The boys that visited my cabin thought it great fun to play with Satan. They would pull the chain out and watch the coon pull it in. When Satan got tired he would coil the chain and lay on it, and the play was ended for the time being. After he had rested awhile he would go on with the play. When he was resting, if a boy offered to reach the chain he would lay back his ears, growl, and show his teeth. When he was ready to play he would sit up on his hind feet, prick his ears forward and look clever; then the boys could reach under him and pull out the chain without danger.

One day, while the coon was chained to a stake in the dooryard, he killed a pet bird in a manner so cruel and crafty, that it caused me to name him Satan then and there. I had

placed a piece of matting by the stake to which the coon was chained. He understood that the matting was for his use, and he would cry to be fed while chained out. He used the matting as a dining-table and bed combined. The pet bird that was killed was a male catbird. Satan had left a piece of cookie on the matting, and the catbird thought to appropriate it. I was writing, not thirty feet away, and looked up just in time to see the flash of Satan's paw. I shouted, and rushed to the rescue. When I reached the coon the bird had disappeared. Satan looked so innocent and surprised that I was led to believe that the bird had escaped. I returned to my writing, and the coon settled down for a nap. An hour later a visitor from the city called to get the loan of a book on birds. I went to the cabin for the book, and when I returned Satan was patting down the edge of the mat. He saw me, and put on his innocent look. He coiled up as if he were about to try to sleep in a new spot. My suspicion was aroused. I pulled away the coon and under

the mat found the dead bird. He had killed the bird and placed it under him so swiftly that I did not detect the trick when I went to the rescue. For a full hour he simulated sleep while he had the dead bird under him all the time. When I went to the cabin he hid the dead body under the mat. I gave him a severe whipping and placed the dead bird on his mat. The next day I buried the body, so Satan did not profit by his crafty deed. He remembered the whipping, and ever after did not molest the birds. I once saw a young towhee-bunting sit on his hind foot and eat from a cookie that the coon had tried to hide. How it would have fared with the bird, if I had been absent, is a question.

I don't think Satan had any respect for the Sabbath, but he knew the day, nevertheless. On week-days, I returned from city about nine o'clock A. M. Soon after, I would stake Satan in the dooryard, and he would seem much pleased with the change. I got up every morning at daybreak. My first duty was to feed the birds and Satan, then get

my breakfast. At first I did not let Satan out of his cage on Sundays, on account of the dogs that my visitors brought along. Every Sunday morning I would feed Satan as soon as I was out of my hammock, as I did on week-day mornings, but he would not eat or drink, and constantly tried to open the door of the cage. He certainly knew, thus early in the morning, that it was Sunday, and he would have to remain hived up in his cage all day. It seemed to me, that if Satan was intelligent enough to keep run of the days of the week, he ought to know about the dogs, and was willing to fight them rather than be cooped up all day. I knew all about the fighting ability of the raccoon. It had been my good fortune to observe the evolution of a young coon, from a helpless, sprawling bunch of fat and fur, to an old coon, with a bristling battery of claws and teeth operated by chain-lightning. After due consideration I concluded to let Satan take chances with the dogs. The next Sunday I staked him in the dooryard and awaited developments.

A big Newfoundland dog was the first to appear. The moment he saw the coon he made a fierce rush, but Satan sprang lightly into the air and landed on the dog's back. Swiftly and savagely he delivered two blows on the dog's eyes. The big brute tore himself away from the coon and frantically rubbed his eyes with his fore paws. When he could see a little, he "dusted" for home, a sadder but wiser dog.

The next dog was a small one, and Satan gave him a slap under the ear that landed him outside of the ring, or beyond the length of the coon's chain. This dog did not go home, but went to his master for sympathy. He could not be induced afterward to look at the coon.

Dog number three proved to be a yelping cur. He did not attack the coon, but danced around him, yelping all the time. He distracted the visitors with his incessant yelping. His master could not call him off. Satan set a trap for the cur, and caught him, too. He went to the stake, pulled in the chain,

and then pretended to sleep. The dog was deceived, and got bolder and bolder until he was near enough for Satan to reach him. The coon made a swift rush and caught the yelping cur, and handled him so roughly that I was obliged to rescue him. It is needless to say that the cur was cured of yelping.

Satan whipped two other dogs before night, then for several weeks had no trouble worth mentioning. Now and then, through the summer, a strange dog would attack Satan and get whipped.

There is a class of writers that claim that the lower animals cannot reason. That such animals are controlled by instinct. I have ever found the lower animals as intelligent in relation to the needs of their lives as we are to ours. Satan proved to me and to others that he could reason, also that he could take advantage of new circumstances. Visitors often gave Satan a dirty nut, which he would clean by rubbing it between his paws. This trick was played on the coon constantly. Satan invented a new way to clean a nut. He

would take it to the mat and roll it under his fore paw. How did he find out that he could clean a nut on the mat? There was no instinct, as I afterward proved. When visitors were feeding nuts to him I dusted his mat with ashes. Satan would take a nut and start for the mat, but his keen sight would detect the ashes, and he would stop, sit up, and clean the nut in the old way.

In November I trapped another coon, a young male. Doubtless he was the son of Satan, for he was from the same den. I knew, too, that he was born after Satan was captured, so they could have no knowledge of each other. I thought I would put the young coon in Satan's cage and see if the old fellow would recognize his own flesh and blood. If he did, I would have to admit that it was a case of instinct. When I put them together a desperate fight took place. The young coon was soon whipped and tried to hide. Satan followed him up, but suddenly began to sniff. He dropped his nose on to the young coon's ears, sniffing all the time.

Instantly his savage look changed for one of pleasure. His ears, that just now were flat on his head, pricked up, and the lips, which were drawn back, showing the cruel teeth, fell into place. He put his arms around the young coon's neck and dragged him into the nest. Then he licked his ears and head, purring all the time like a big cat. Satan had recognized his son. I had noticed that the sense employed was of smell, and not of sight. I readily understood the meaning. The young coon carried the scent of his mother, and Satan had recognized it, and with subtle reasoning had concluded that he had found his own offspring. Afterward I trapped five coons. One was an adult. I put the four young coons, one at a time, into Satan's cage. Two of these were from the old den, and Satan recognized them at once after sniffing them. The other two were from a distant den, and as soon as Satan put his nose on their ears he fell to mauling them, and I was obliged to take them out to save their lives.

I could handle Satan whenever or however I pleased, and he would not lose his temper. It would be dangerous for a stranger to put a hand on him. One could almost step on him and he would not take offence, but he drew the line at touch. During the nine months that he was in my possession he attacked but one person. I met the gentleman in question at Barnum's Show, on Stage Fort. After the people had entered the main tent I stopped some time in the animal tent. I noticed a dudish-looking fellow acting in a peculiar manner before a cage containing two lions. I was interested, and strolled over to the cage. The fellow was a dude beyond a doubt. He wore a cowboy hat, a checkered coat, a crimson vest, and lavender colored trousers. He was trying to look the lions out of countenance. The big African lion, the male, seemed to feel uneasy under the fixed gaze of the dude, and at last crowded behind his mate. "See him cower and hide," cried the fellow, addressing me. "The human eye, intelligently used, can subdue the most fero-

"WITH A SAVAGE SNARL HE SPRANG ON TO THE DUDE."

cious brute living. I could enter that cage and handle those lions as I would kittens." I did not dispute his assertion, and he asked if the woods about Gloucester harbored wild animals. I told him about my raccoon. He suggested that it would please him to tame the coon for me, and offered to accompany me home.

When the show was over I missed the lion-tamer, but the next day he came down the hill to the cabin, resplendent in his checkered coat, crimson vest, and lavender trousers. As soon as he had said good morning he threw off his hat and coat and started the circus. He fixed his gaze on the coon and slowly approached him, stamping his feet while he cried, in a commanding tone, "Down, sir, down, sir!" Satan looked at the dude, then looked toward me. This was something new, and he wanted my opinon. When he found that I remained quiet, he concluded to act for himself. With a savage snarl he sprang on to the dude and fastened his claws in the lavender trousers. The dude, half-frightened

to death, jumped backward beyond the length of Satan's chain. Satan held on, and the trousers were stripped from the hips to the knees. Fortunately, the coon's claws did not reach the flesh.

The dude put on a pair of my trousers, and with needle and silk I essayed to mend the lavender wreck. My work was rather clumsy. I should starve to death if I depended on the needle. I toiled and wrestled for two hours with that piece of work. It was a warm day, and I was nearly drowned in my own perspiration.

The dude put on the mended trousers and left me without saying so much as "thank you." Thus was Hood's "Song of the Shirt" verified.

On the approach of cold weather I made arrangements to winter Satan in the cabin. I placed a box inside, and the cage outside, and connected the two by a passage made of boards. The passage was eight inches square, and near the end that entered the cage I had hung a swinging door to keep

the cold air from the nest inside. I expected Satan would have to be taught the use of the swinging door. After everything was arranged I put Satan into the cage, and at once he saw the change that had been made. He investigated the passage with his handy paws, and when he found he could move the swinging door he passed through into the box inside. After he had satisfied himself that the nest was all right, he came out.

To tell the truth, I was somewhat surprised by the ingenuity displayed. Satan's comprehension was equal to that of a human being. I removed the chain and collar, and the coon and I settled down for the winter. I had arranged a cover to Satan's nest-box, and evenings I would give him the freedom of the cabin. Inside of a week he knew the contents of the cabin better than I did. The light puzzled him. Once, and once only, he touched the lamp-chimney. He would look on gravely while I would blow out the lamp and relight it again.

One night I forgot to fasten the cover in

his nest-box. That night something touched me on the face and awoke me. I remained quiet, and soon I felt a cold, soft touch on my cheek. A swift clutch and I had Satan by one paw. I held him until I had lighted the lamp. He looked innocent and grieved, and tried to show me that he did not mean any wrong. He wanted to know if I were asleep or dead. When I released him he went to his box and raised the cover so quickly and neatly that it seemed a slight-of-hand performance.

One morning I neglected to secure the door to Satan's cage. When I returned that night the door was open and the coon was missing. The next day I took some food to the den under the boulder, but Satan did not care for food. He was fat enough to go into hibernation, and had probably entered upon the sleep that would last till spring. The next spring Satan would come to the mouth of the den and take food from my hand, but he was so crafty that I could not get hold of his neck. I thought to arrange a box-

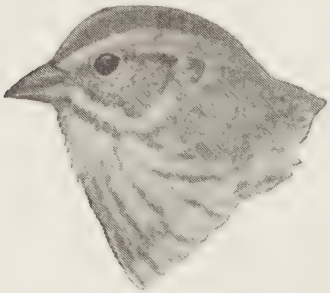
trap in which to catch him, when I could get time. One day I missed him, and when I heard that a farmer had caught a coon in his poultry-house, and had killed him, I knew that Satan had sacrificed his life to his appetite for poultry. The reckless act did not indicate a lack of reason.

Human beings sacrifice their lives to appetite, so which of us will throw the first stone at Satan?

III.

WABBLES

Wabbles is the name of a wild bird. Not a book name, for the bird is known to natural-



SONG-SPARROW.

ists as the song-sparrow (*Melospiza fasciata*). I made Wabbles's acquaintance some years

ago. On returning to my log cabin one afternoon, I had found him in the dooryard, wounded, bleeding, and exhausted. An examination disclosed a number four shot bedded in the muscle of the wing-joint. While I was removing the lead Wabbles struggled violently, and when released, hopped into the bushes and hid himself. I think he held a poor opinion of my surgical skill. The next day he was about the dooryard with other sparrows, but for many days his flight was a peculiar wabble, hence his name.

Wabbles was left behind when, on the approach of cold weather, the song-sparrows migrated southward. He seemed contented, and I thought he would stop with me through the winter, but one cold day he was missing.

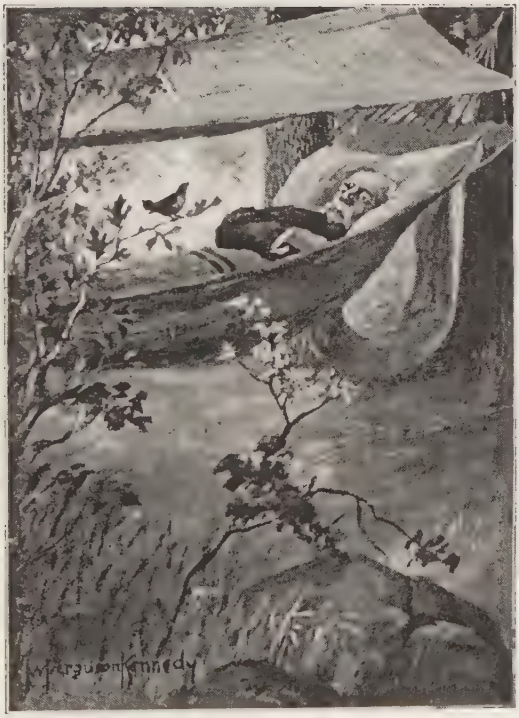
Early in the following March, I looked out upon the snow-banks one blustering morning, and saw Wabbles in the dooryard. He had returned in the night, two weeks ahead of his mates. I do not know how far south he had wintered, but doubtless he had remembered the little log cabin in the woods, and all the

time had understood that food and a welcome awaited his return.

That spring the sparrows lingered about my dooryard three weeks or more, and then dispersed to the neighboring fields and pastures, for the song-sparrow does not nest in the woods. Wabbles did not leave with the rest, and when spring merged into summer and he yet remained, I understood the reason. The male song-sparrow is obliged to do battle for the possession of a mate, and Wabbles, with his tender wing, wisely forbore to enter the lists. He preferred the cool woods and free food to the sun-scorched fields and a mateless life.

Wabbles and I became fast friends. He was constantly hopping about the dooryard, and was always on hand to greet me whenever I returned from town.

I slept in the open air in a hammock, with only a canvas roof to keep off the rain, and Wabbles made it his business to awake me at daylight. The little rogue pursued the same method each morning. He would hop about



"WABBLES MADE IT HIS BUSINESS TO AWAKE ME AT DAYLIGHT."

in the bushes near the hammock, and chirp to me in the loud, sharp call-note peculiar to the sparrow family. If I remained quiet he would break into song. He confined his singing usually to the morning and evening hours. But on my return after a long absence, he would sing for a short time, regardless of the time of day. It was a bird's method of expressing joy. I thought that he prized my companionship and disliked to be left alone.

That fall Wabbles migrated with his mates, but the next spring he returned as before, two weeks ahead of the main flock. He lingered about the cabin until the mating season approached, when he disappeared for five days. On his return he brought with him a mate — a shy, demure little wife.

Wabbles wanted to set up housekeeping in the woods, so he showed Mrs. Wabbles all the nooks, sly corners, and sheltered spots, but it was useless; she positively refused to build a nest beneath the trees. She flew away to the fields, and Wabbles followed her.

Three weeks later, when returning from

town, I heard his familiar call by the roadside. He came hurriedly through the bushes and fluttered to my feet. He appeared overjoyed to see me, and greedily ate the cracker-crumbs I gave him. When he flew away, I followed him. He led me a long distance to a field, where I found Mrs. Wabbles sitting on four dainty, speckled eggs. The nest was in the open field, beneath a tuft of grass.

Three baby sparrows were reared from this nest. When they were big enough to fly, I expected that Wabbles would move his whole family to the woods, provided Mrs. Wabbles would consent, which I much doubted. Sure enough, early in autumn Wabbles returned, but he was alone. I fancied that he had deserted his family for my companionship and a life in the woods. But not so. His visit was a matter of business. He wanted to know how the supplies of food held out. After he had satisfied himself he flew away, but the next day returned with one of the baby birds. Wabbles fussed over this bird all day long. He called the little one into the dooryard and

stuffed it with crumbs, then into the garden and stuffed it with insects. He kept up a constant chirping meanwhile, and I thought he made much of the fuss and bustle to keep the baby from being homesick. That night he flew away with his charge, and the next day did not appear. Undoubtedly Mrs. Wabbles had given him a piece of her mind for taking her baby to the woods.

Three days later, however, Wabbles returned, and brought with him two of the babies. This day, for fuss and bustle, was like the first, but that night, instead of taking the birds out to the fields, he put them to bed in a hemlock-tree near my hammock, after which he flew away. The next day he brought in the other baby, leaving Mrs. Wabbles childless and alone. That night Wabbles put the three little ones to bed in the same hemlock-tree, and then flew back to his deserted mate.

Before dark I looked for the young birds, and found them on a twig about a man's height from the ground, sitting side by side and cunningly concealed by hemlock spray.

When I approached, three little heads turned and six bright eyes looked on me, but not with fear. I suppose Wabbles had told them all about the hermit, and they knew I would not harm them.

The next morning Wabbles returned, and Mrs. Wabbles was with him. She at once took charge of her babies, and tried to entice them away. But Wabbles, the sly rogue, hopped into the dooryard, and I heard him calling, "*Tsp, tsp,*" and the little fellows heard him, too, and, remembering the food, flew to him. Mrs. Wabbles was obliged to give in.

Wabbles is not wholly unknown to notoriety. Many of the summer residents that visited my cabin had made his acquaintance, and the story of the little bird that would desert the fields for a hermit-life in the woods has doubtless often been told in many a distant home.

Before the birds had departed in migration, Wabbles's little wife had become contented and happy in the cabin dooryard.

She was of a confiding nature, and in a remarkably short time would take food from my hand. Wabbles and his family lingered about the cabin until the thermometer registered ten above. The fifteenth of March Wabbles returned to my dooryard. His wife and family appeared a week later.

For some reason, known only to bird-life, the male birds of most species return from the south about a week before the females and young birds.

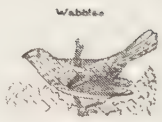
When the nesting-season approached Wabbles and his wife located their family in a less wooded growth, on the road to the city. The old birds returned to the dooryard, and Mrs. Wabbles made a nest where a little patch of grass had sprung up between the ledges.

Wabbles and I, during the summer, renewed the friendly relations that had existed when he led the life of a bachelor. He would come to me for food at all hours of the day. When I gave him his favorite food, cookie, he would reward me with a song. He would fly to a limb about four feet above my head

and sing one song, and then fly away to his mate. Sometimes I could coax him to repeat the song by talking to him earnestly and rapidly. My visitors thought that the song was strange, and often it was suggested that it was on account of the nearness of the singer. But the song was not the one with which they were familiar. It was a new song, low, sweet, and tender, with nothing in it to remind one of the loud, joyous carol heard in the springtime.

Wabbles called me at daybreak every morning. He was jealous of the other birds, and drove them away, when he thought they were too friendly with me. A catbird and a veery hopped about my hammock mornings, and Wabbles attacked them so furiously that it made me wonder why they did not keep away for good. Wabbles did not allow other birds to eat in the dooryard until he had satisfied his appetite. Visitors asserted that he was a tyrant, but I did not look at his warlike actions in that light. He thought that he

owned the dooryard, and other birds were trespassers.



Near my cabin there is a notice posted forbidding trespass, and it alludes sarcastically to "*wood-cutting thieves.*" This sign was put up because sometimes dead, worthless wood was carried away from the lot. Wabbles is willing that the birds may enjoy the things in the dooryard after he is satisfied, but the human fellow preferred to let the wood rot on the ground.

The feathered biped's humanity contrasts sharply with the human biped's brutality.

Mrs. Wabbles soon had four little mouths to feed, and she worked early and late. The heat was so intense that every little while she would seek the shade, and rest with her wings drooping and her bill open. Notwithstanding the strain on her limited strength, she never showed impatience, but was always the same confiding little bird.

The Wabbles family enjoyed life in the woods. Through the summer and fall months, Wabbles set up a singing-school and trained

his boys to sing the mating-song of his species.

Late in the fall death entered the family circle. A boy from the city mistook poor Mrs. Wabbles for an English sparrow and shot her to death. Wabbles mourned for his little wife, and he was not the only mourner. I had become attached to the gentle bird, and I was grievously pained by her tragic death.

Wabbles lost his joyous manner. He watched over his motherless babies with gentle care, but not a song did I hear after the tragedy. Later, he conducted the young birds to a warmer climate, and was lost to me until the next March.

When Wabbles returned in the spring he was alone, and his children did not appear later. I suppose some motherly bird had adopted the bereaved family, to take them into the fields or pastures.

In April, Wabbles deserted me for three days, then returned with another wife. This was an old bird, probably a widow. It was evident from the first that she thought Wab-

bles's first wife had spoiled him. She bossed him around in grand style. I tried to get acquainted with her, but, with a lordly air, she gave me to understand that she did not associate with hermits. After two days she ordered Wabbles out to the fields, and I did not see him again till October. He came in twice before migration. That was all. Wabbles, the warrior, was henpecked.

Wabbles

The next spring Wabbles returned from the South early in March. I think he was glad to escape from his wife, but three weeks later she swooped down on him, and packed him off to the pastures.

For eleven years Wabbles has lived with his second wife. Every spring he comes to the cabin for a long visit, but I seldom see much of him in the fall. Once I did not see him at all, and reported that probably he was dead, but the next spring he turned up as usual.

It is now fourteen years since I removed the shot from Wabbles's wing. He does not

grow old in looks and is yet good for many years, if his wife does not worry him to death.

Dear old Wabbles. He has blessed me with a friendship as sincere and lasting as any that can spring from the human heart. As the years go by, I am more and more impressed with the little bird's individuality. Long ago he proved to me that he possessed a moral sense.

When Wabbles finds birds in the dooryard he threatens them for a short time, then darts at the nearest, and the feathers fly. After he has satisfied his appetite he will let the other birds return to glean the dooryard. He does not want to deprive them of food, but insists that they shall await his pleasure. Sometimes he will sing while the birds are eating. He firmly believes that he holds a mortgage on the dooryard, or, perhaps, that he is a joint owner with me; but he insists that his property rights must be respected.

One afternoon I found a wounded chickadee in the dooryard. Some wretch had shot away one leg and had injured a wing besides. I

WABBLES.

thought Wabbles would make short work of the helpless bird, but instead he hopped around him and talked to him in a low tone. There was no threat in his notes such as he uttered when angry. Up to the time that Wabbles left in migration the chickadee was allowed the freedom of the cabin dooryard.

When Wabbles's first wife was alive, he returned one spring the tenth day of March, and brought with him a male linnet. I was surprised, for it was peculiar that a linnet should return in migration three weeks before the usual time. A week later Mrs. Wabbles returned, and with her was the mate to the linnet. This incident opened up a wide field for reflection. It proved that two species of the bird family could communicate ideas to each other.

These birds must have met in the South. In the course of bird gossip either the linnets or sparrows had announced that the summer home was on Cape Ann. "That is where we live," is the glad reply, so the birds, having come from the same locality, associate to-

gether. Wabbles tells them about the hermit and the dooryard crowded with food. In some way he induced the male linnet to accompany him, three weeks out of season, with the understanding that Mrs. Wabbles, a week later, would pilot the female linnet to her husband.

It must be remembered that linnets do not inhabit the woods. Wabbles gave the freedom of the dooryard to the linnets. They were invited guests, and were treated as such. It all goes to show that Wabbles knows what belongs to good breeding and possesses a moral sense.

IV.

BISMARCK, THE RED SQUIRREL

The red squirrel, or chickaree, leads all the wild things in the woodlands of Cape Ann for intelligence and the ability to maintain an existence under adverse circumstances.

His life during the spring and summer months is a grand hurrah, but in the fall he sobers down and plods and toils in his harvest-fields like a thrifty farmer.

Right or wrong, it is a fact that the red squirrel bears a disreputable character. He is called a thief because he takes the farmers' corn, and a bloodthirsty wretch for robbing birds' nests. From my experience with the chickaree I am led to believe that he is not so black as painted. I used to think that he spared neither eggs nor young, but sav-

agely robbed every bird's nest which he chanced to find. I certainly got this idea from books, for I cannot recall an instance where a bird's nest was robbed by a red squirrel.

For years I thought a squirrel was seeking food when he chased the birds in my dooryard. Now my eyes are open, and I am heartily ashamed of myself. I awoke from my trance to find that the red squirrel was simply chasing the birds out of the dooryard and away from the food, which he claimed as his own.

Twice last summer I saw a red squirrel pounce on a young towhee-bunting, but both times he let the bird go without the loss of a feather. It was evident that he did not intend to injure the bird, but merely desired to frighten it away. The intention was so evident that I could not ignore it, and it led me to do a lot of thinking.

I carefully examined my notes for proof of the squirrel's guilt, and found no record against him. The guilty ones were the hawk,

PIGEON HAWK.

the owl, the snake, the stoat, the crow, the cat, the irrepressible boy, and the white-footed mouse. For fifteen years birds have nested around my cabin unmolested by the red squirrel.

It was always a mystery to me why the birds were not afraid of the red squirrel. Let a hawk, an owl, a weasel, a cat, a snake, or any of the animals known to prey on birds, enter my dooryard while birds were rearing their young, and the wildest alarm would prevail so long as the intruder was in sight. The red squirrel can come and go without a protest, which proves that the birds do not regard him as an enemy.

Whenever I have detected a squirrel investigating a bird's nest it has turned out that curiosity was the motive.

A pair of chickadees nested in a box that I had placed in an oak-tree, and a squirrel that spent the most of his time in the dooryard made it a duty to investigate the nest several times a day. He did not harm the

young birds, and the old birds did not fear him.

While I was watching a red-eyed vireo's nest last season, I saw a red squirrel run out to the nest, stretch his full length on the limb (it was a very warm day), and look down on to the young birds that were squirming about in their confined quarters. I counted ninety-six before he left, and I did not begin at first. I think he was on the limb fully two minutes. These young vireos were not molested, for I saw them leave the nest when full fledged.

I have a record of an oven-bird that nested at the foot of a pine-tree which contained a red squirrel's nest. Four young squirrels were reared in a leafy nest in the top of the pine, and three young oven-birds in a domed nest on the ground.

My experience with the red squirrel has caused me to change my mind, and hereafter I shall hold him innocent until he is proved guilty.

The red squirrel in this locality is about

seven and a half inches in length, measuring from the nose to the base of the tail. The tail is about six and a half inches in length, and is carried in a number of ways to suit the convenience of its owner. As to color, it seems as if there are two species, but it is only the difference between the young and the very old. Young squirrels are bright red on the back and sides, with the under parts usually a pure white. Old squirrels are red along the back bone, gray on the sides, and a dirty white below. Some specimens are shot that are nearly all gray. Gunners claim that such squirrels are a cross between the red and the gray, but they are simply old red squirrels.

Dame Nature has been unusually kind to the red squirrel. She has provided him with powerful weapons of offence and defence. She has set in his muscular jaws long, cruel teeth, which are whet to a keen edge on the hard-shelled nuts. She has conferred upon him claws sharp as needles, and a muscular system which seemingly is controlled by an electric current. There is a wicked wild fire

in his bright eye that stamps him the bravest wild thing of the forest. He will fight to the death. He whips his great cousin, the gray squirrel, without effort, and is a match for the large stoat.

When pursued by a dog he makes a dash for the nearest tree, which he mounts, calling out "chickaree" as soon as he is out of danger. He does not, like the gray squirrel, seek a hiding-place in the top of the tree. No, he is far too bold to hide from a dog. He stops on a low limb, just out of reach, and fairly boils over with rage and fury. He barks, spits, and sputters; he makes furious rushes, as if he intended to come right down the tree, and "whip that dog." He violently jerks his tail, and pounds the limb with his hind feet, a picture of impudent, fiery energy.

Every movement of this little squirrel is accomplished without apparent muscular energy. He seems to float up a tree. If you are near enough you may hear the pricking of his claws on the bark, but you cannot detect a muscular effort. He flashes along the

limbs in some mysterious way, never stopping, like the gray squirrel, to measure distances before a leap. If he misses and falls, he usually catches by a claw to some twig, thus saving himself. If he falls to the ground, it does not harm or disconcert him. He is up the tree in a jiffy, spitefully saying things that sound to the listener very much like swearing.

From the middle of April to the first of September the male squirrel leads a jolly, rollicking life. He is as restless and noisy as a schoolboy, and as full of fun. He will hang head down, holding on by his hind claws, just for the fun of the thing. In the tree-tops he is king. He rules the blue jays and crows, and races them out of the pine-trees whenever he feels disposed. He hazes the gray squirrel, but does not unsex him as alleged. This silly tale is on a par with snakes' stingers and hoop snakes. Any one that has had the opportunity to observe squirrels the year round, knows that chipmunks, red squirrels, and gray squirrels show the same appear-

ance of being unsexed, except in the mating season.

The gray is no match for the red in a tree-top in a trial of speed. He usually keeps to the ground, where his long leaps give him the advantage over his fiery little foe. Many a sprinting match of this kind takes place in my dooryard. If a red surprises a gray squirrel stealing food, he sounds his war-cry, and in a mad rush is on to the gray before he can make off with the bit of food which he has appropriated. The gray, finding that he is hard pressed, runs around the cabin with the red hot at his heels. Round and round they go, the gray silent, the red yelling like a little demon. When the gray has had several narrow escapes, he drops the food and retreats unmolested. The red picks up the food and takes it to a favorite limb, where he devours it, talking to himself, meanwhile, about "that gray thief."

In all my years of observation, once only have I known a gray squirrel to fight a red. I think it was hunger and desperation that in-

"MANY A SPRINTING MATCH OF THIS KIND TAKES PLACE IN MY DOORYARD."

duced the gray to fight. The gray was an old male, certainly three times as large as the red. The latter was an old male, and had held the dooryard for several years against all comers. He was a sagacious, grizzled old warrior, and I named him Bismarck. The fight took place in my dooryard. It was a bloody battle for bread on a cold, drizzly day in midwinter. The gray was whipped inside of three minutes. The snow was crimsoned with his blood, and when he fled he left a bloody trail behind. At no time was there a ghost of a chance for him to win. The muscular energy of the red was astounding. His movements were too quick for the eye. While the fight lasted, all I could see was a bounding mass of red and gray. The red squirrel did not appear to be severely wounded, anyway he remained out in the cold and rain to lick his wounds. Perhaps it was squirrel surgery to prefer the cold to a warm nest.

From my observations I find that the reds seldom chase the grays, unless the latter enter

territory which the reds claim the right to hold and protect.

Four-footed wild animals, with a few exceptions, own farms, gardens, or house-lots. That is, they hold exclusive control over a limited area around their nesting sites. You seldom see two woodchuck holes near each other, or two rabbit burrows. The red squirrel runs a fruit farm. He owns and controls trees that bear nuts or cones, and other reds respect his rights, and do not invade his territory unless there is a famine. A red squirrel will fight savagely for his home and property, and usually drives all intruders from his domain.

Young squirrels remain with their parents through the first winter, but in April the female turns the family over to the male, and makes another nest of moss, leaves, and dry grass in the top of a tall pine or hemlock-tree. While she is engaged by new duties, the male looks after the young squirrels that are now full grown. He finishes their education, and locates the young males on territory which

they ever after hold. The young females, later on, are mated, and remove to the locality inhabited by their mates. Whether the parents have anything to do in selecting sons-in-law is beyond my knowledge. I have known an old male to fly into a passion when a smart young red tried to flirt with his daughter. The flirtation was cut short by the angry father, who run the young dandy off his territory. Kicked him out-of-doors, so to speak. Another young red that courted the daughter was tolerated, if not welcomed, by the father. He was the choice of the old fellow beyond doubt, but I do not know how the young lady decided the matter. Perhaps she eloped with the smart young red.

Bismarck, the grizzled old warrior, held my dooryard for several years. One winter, when there was a famine in the land because the nut crop had failed, a muscular young red thought he could drive Bismarck away. A fierce battle was the consequence, and Bismarck killed his antagonist, but was disfigured for life by the loss of the end of his tail.

While Bismarck reigned, the only squirrel that gained a foothold in the dooryard without his consent was his wife. He chased her away time after time, but like some human wives, she persisted, and won the day. Bismarck gave in when, instead of running away, his wife adopted the plan of running spirally up and down the tree-trunks. Mrs. Bismarck's favorite tree was a large hemlock, which was about eighteen inches in diameter. The trunk of the tree was very short, not over eight feet in length from the ground to the lower limbs. The squirrels made two turns in either going up or down the tree, and their speed was too swift for the human eye. A brown band seemed for a moment wound about the tree, shifting as the squirrels ascended or descended. It was two weeks before Bismarck would allow his mate to remain in the dooryard. When peace was declared the two would eat side by side, but with Bismarck always scolding and growling, while his wife discreetly remained silent.

Bismarck was my schoolmaster. He taught

me that squirrels think, plan, and reason just as human beings do. Every time I threw to him a nut or bit of bread, I would see him do the thinking act. He would take the food to a boulder, where he would stop, hold up one foot ready to start again, and think out a good hiding-place. When he had thought out a spot, he would run directly to it and conceal the food under leaves or pine-needles, and return to the dooryard for more. No two nuts or bits of bread were concealed in the same place. Several times I experimented to find out how many trips Bismarck would make. The greatest number was fifty-one. While the experiment was going on, I noted each hiding-place, as well as I could, and afterward saw the squirrel go to many. He certainly remembered each spot, and his keen scent did the rest.

Bismarck was a thrifty squirrel. He did not disturb his hidden store while the food held out in the dooryard. He would call around early in the morning, and if he found me eating breakfast under the trees, he would

run to a limb just over my head and look down in a cute way that meant "breakfast for two." If I did not respond he would probably say to himself, "The hermit don't mean to feed me to-day. I must fall back on the food that I hid away yesterday. Let me see, that first nut is under the edge of a boulder just back of the cabin." Off he goes straight to the spot. He noses out the nut, which he eats on the limb over my head, scattering the bits of shell on to the breakfast-table. He is very sociable while eating, for he stops now and then to say something to me. I do not understand his exact language, but I know by the tone that he means to be friendly.

Bismarck did not always hide bread beneath pine-needles or leaves. At a certain season of the year the trees about my cabin were made into storehouses. This season was governed by the blue jays. When they were nesting they did not come to the cabin and Bismarck could store food in the trees without fear of being robbed.

My attention was called early to the fact

that a gale of wind did not dislodge the pieces of bread which the squirrel had stored on the limbs of a hemlock-tree. I found that each piece was held in place by a small twig. Scores of times afterward I saw Bismarck lift up a twig with his hands and then push the piece of bread with his nose to the junction of twig and limb. Of course the natural spring of the twig held the bread in place.

Bismarck always stored mushrooms in the trees, for he knew that the blue jays did not eat such food. He would drop the stem of the mushroom between the prongs of a forked limb, if there was cap enough left to hold the same in place, otherwise he treated it just as he would a piece of bread.

How Bismarck acquired a knowledge of the edible mushrooms is a mystery beyond my powers. Doubtless, when he attended the Chickaree College, he studied natural history instead of the dead languages. He knew how to harvest mushrooms. He gathered them soon after they appeared above the ground. Gathered thus, they would keep several days,

while a few hours' growth would spoil them if left in the ground.

Bismarck

Bismarck knew how to eat mushrooms. He did not begin on the freshly gathered ones; he knew they would keep, and he selected those that would decay shortly. Human beings eat the specked apples from motives of economy, and the same impulse controls the squirrel.

In the woods about my cabin grow many varieties of the poisonous mushrooms. One deadly variety — the "Destroying Angel" — possesses a form most pleasing to the eye. Its symmetrical shape and pearly white color give it a look of innocence that has lured many a human being to an early grave. I have never seen a tooth-mark by a squirrel, mouse, or mole in one of these deadly mushrooms, which goes to prove that the wild things know more than some human beings.

A few years ago, while out on a walk with the Appalachian Mountain Club, I told a professor, who was an expert on mushrooms, that I used the mushrooms which were approved by the squirrels, and no others. He said that I

was risking my life, for he claimed that squirrels could eat poisonous varieties that might kill human beings. I thought that the professor knew more about mushrooms than he did about squirrels, so his warning was wasted on me. Up to date I have found the squirrels all right, and I feel no fear when eating what they eat.

For years I attended a squirrels' school, and Bismarck was the schoolmaster. He taught me many things relating to squirrel life. Much of the knowledge acquired was wholly unknown to me before.

When Bismarck first introduced himself to me I think he was an old bachelor or a widower. Three years later he excavated a storehouse in a bank, beneath a boulder, and made a sleeping-nest in a pine-tree, both in the dooryard. The storehouse was used but little after the first winter. The next spring he took to himself a mate, but did not introduce her to the dooryard. Some distance from the cabin, in a swamp, Bismarck's mate made a neat little nest in a hemlock-tree.

Here she reared two baby squirrels. Bismarck did not take much interest in his family through the summer. He spent most of the time in the dooryard, sleeping in his own nest by night. By day his time was occupied in fighting the crows, and in driving squirrels and birds from the dooryard.

There was always a good lot of food for Bismarck to choose from, and I thought he would give up hard work and lead a life of ease. But I did not know the thrifty ways of the red squirrel. When the harvest season for hazelnuts drew near, Bismarck buckled down to hard work. He began his new life by calling often on his family in the hemlock-tree. One day I found Bismarck and his wife digging beneath a pine-tree that grew on the high land just out of the swamp. They brought out a great quantity of pine rootlets during the next two days. There was not much soil, which indicated that the squirrels had discovered a natural cavity, partly filled with pine rootlets. The third day, about four o'clock in the afternoon, the work stopped.

"THE WINTER STOREHOUSE WAS COMPLETED."

Mrs. Bismarck ran to a pine-root, sat up straight, folded her hands, and said something. Mr. Bismarck ran to her side, folded his hands, and made a reply. Both squirrels looked toward the hole beneath the tree by turning half-way round. Then they looked at each other, and Mrs. Bismarck ran into the hole, and immediately appeared and said something that sounded very much like "It is well." Then both squirrels scampered away. The winter storehouse was completed.

Bismarck.

When the hazelnuts were ripe Bismarck and his mate began to fill the storehouse. Bismarck gathered the hazelnuts about the cabin, while his mate gathered those around the home nest. Bismarck did a lot of running, for he carried but one nut at a time. He always worked under high pressure, running to and fro at the top of his speed.

I noticed that he left many nuts on the bushes, but when I investigated I found a worm in each nut — a good reason for rejecting them; but as the husks seemed perfect, how did Bismarck know the worms were there?

I think his keen scent was the secret. By the sense of smell he could tell a wormy from a sound nut. So could I after the nut was smashed, but not before.

After the hazelnuts, beechnuts were gathered. But right here competition was too great for the squirrels. The blue jays haunted the beech groves, and could load up with from twelve to eighteen nuts, then could use their wings against the squirrels' legs, so the latter were usually short on beechnuts.

The acorn followed the beechnut crop, and as the woods of Cape Ann are made up mostly of oak-trees, there were usually nuts enough for Bismarck's family and to spare.

Besides being a hard worker, Bismarck proved to me, in many ways, that he was quick-witted and resourceful. A sweet acorn-tree near my cabin was loaded with nuts. Beneath the limbs on the south side was a carpet of pine-needles, while under the limbs on the north side grew a dense mass of brambles and catbriers. Bismarck did not drop a nut into the mass of briers, but carried

each nut — one at a time — to the clear side before dropping it. Could human intelligence do more?

When Bismarck and his mate had stowed away food enough for winter, they made a winter nest in the pine-tree that grew above the storehouse. In the new nest the whole family passed the winter after the manner of red squirrels.

The two baby squirrels for the most of the harvest-time remained in the nest or on the hemlock-tree in which the nest was located. Now and then they followed the mother to a nut-tree, but were so noisy that I imagine the fear of enemies caused the discreet mother to drive them home.

When the family storehouse was well filled, Bismarck stored a few nuts in the hole at the cabin. I think he would have stored more if it had not been for the alert wood-mice. He hid a great many nuts around boulders and trees. These nuts were used in the winter, and often lasted until late in the spring. In the spring, when the nuts started to grow,

Bismarck dug them up, bit off the sprouts, and buried them again.

When the nut crop is a failure, the squirrels are face to face with a famine. Long before the nut season approaches the squirrels know that they must depend on other food for the winter's supply. During one year of failure I carefully noted how Bismarck conducted himself, knowing that he would teach me how the red squirrel provides food when his main supply is cut off. When September warned the squirrels that the season for providing food for winter was on, Bismarck turned his attention to the corn in the dooryard. Years before he had stored corn, when he was obliged to compete with the blue jays and chipmunks. The latter could carry away from fourteen to nineteen grains, while Bismarck's load was but two grains. He soon evened things up by hiding corn in the dooryard, or near it. When the supply was exhausted, and the blue jays and chipmunks had disappeared, Bismarck would dig up his corn and carry it home. It was sharp prac-

tice, but the squirrel was justified, when we consider the circumstances. For several years prior to the famine, Bismarck had dropped the habit of storing corn, and only gnawed out the germ, leaving the mutilated grain for the blue jays and chipmunks. Now Bismarck undertook to store corn, hiding it as of old, but I vetoed the act, by withholding the corn. The squirrel then turned his attention to a black cherry-tree, and with the aid of a chipmunk, soon stripped it of fruit. I think the chipmunk gathered the fruit for the stone. He gathered an enormous quantity, and surely could not make use of the soft part. The red squirrel may have gathered for immediate use and also for a winter supply.

Bismarck's next move was a great surprise. I caught him carrying bones to his storehouse.

One summer I saw Bismarck sitting on a stone wall, apparently eating a bone. After he got through he hid the bone in the wall. I found that the bone was old and partly decayed. I smashed up similar bones, and Bismarck seemed to relish a meal three or four

times a week, but I never knew him to store bones for winter use before. His next move was to attack the pine-cones. These were gathered while quite green. They were left on the ground three or four days and then carried, whole, to the family storehouse — a great quantity was stored under stumps, trees, and boulders. The hemlock-cones were gathered later, but were husked at the foot of the tree on which they grew.

During the following winter Bismarck looked to me for food. A loaf of bread was wired to a post near the cabin door, from which he could eat, while he could not carry it away. One cold, rainy day, he sat by the bread without eating, and whimpered like a little child. He was telling me in squirrel language that it was cold, rainy, and almost night, and that I ought to give him some bread to take home to his family. I understood his appeal, and passed him a biscuit. He scampered away chuckling over his good luck. After that, fair or foul, all through the winter days, he would beg for bread to

take home, and always chuckled when he got it. Perhaps he was laughing at me for being an easy mark, or it may have been squirrel for "I thank you a thousand times." However that may be, he was welcome, for I thought of the baby squirrels starving along on a cone-seed diet.

Bismarck would eat all kinds of meat — even fat pork — but he preferred cooked meat to raw. While the famine was on he turned his attention to many kinds of food found in the woods. I made a record of each variety, and religiously tasted of everything he used. Frozen barberries and chokeberries were preferred to all others. I found the barberries had lost much of their usual sourness; the chokeberries were sweet and palatable. While the former remained on the bushes through the winter, the latter were soon exhausted, for they were food for quail, grouse, blue jays, and mice. The berries of the greenbrier, staghorn sumach, and roschips were used sparingly. The greenbrier berries had a sweetish taste; the staghorn sumachs were sour and

puckery, while the rosehips had a pleasant flavor at first, ending in a most disagreeable bitter. Many mushrooms were caught by an early frost, and remained frozen through the winter. These were food for Bismarck. He would gnaw out the under part, or gills, rejecting the rest. I tasted the food, but cannot say that I care for frozen mushroom.

In the spring pussy-willow buds formed a part of Bismarck's food. I found the buds nearly tasteless, but they crunched between the teeth like a crisp cucumber. As spring advanced, creeping wintergreen and partridge-berries appeared here and there where the sun had melted the snow, and Bismarck greedily devoured the bright red berries. Later berries formed the greater part of his food until the hazelnuts were ripe. Wild apple-trees abound on Cape Ann, and Bismarck attacked the fruit early in the fall. He destroyed great quantities for the seed, which was the only part stored for winter use. However, he seemed to relish an apple, if it was not too sour, and all through the

winter he would eat a Baldwin apple, even to the seeds, at one sitting.

The history of Bismarck through a year of famine is the history of other red squirrels on Cape Ann. It is evident that the red squirrel is famine proof. If the nut crop is a failure, chickaree turns his attention to other food sources, and by perseverance and hard work is able to keep the wolf from the door.

For years Bismarck and the blue jays have matched wits. After nesting, the blue jays would flock to the cabin and impudently appropriate all the food found in the trees. Bismarck seemed to know that it was useless to store food longer in this way, so he would bury it beneath the pine-needles. The jays were soon on to this trick. When I threw a piece of bread to the squirrel he would start at once to hide it, while the jays would follow him, keeping in the trees, just out of reach. The moment he left, the jays would fly down, dig out the bread and carry it away. It often happened that Bismarck would fool the robbers by pretending to bury the bread. He

would dig a hole, cover it over, pat down the pine-needles, but would run away with the bread in his mouth. While the jays were scratching the pine-needles right and left, in a useless search, Bismarck would hide the bit of bread, and return to the dooryard for more. He was not so particular if the food was wheat bread, but if it was his favorite food — doughnut — the jays were fooled every time.

Every spring Bismarck taps the trees around the cabin. He begins on the maples and ends later on the birches. If the tree is small, he taps the trunk; if large, he works on the limbs. He gnaws through the bark and into the wood, then clings to the limb or trunk, below the wound, while he laps the sweet sap. If there is a hollow in the bark into which the sap flows, Bismarck is sure to find it.

Did the red squirrel learn how to tap trees from the American Indian, or did the Indian learn from the squirrel?

The habits of the red squirrel are rapidly

changing in this locality on account of a foolish State law. The story is quickly told. Ward 8 (city of Gloucester), where my cabin is located, contains over eleven thousand square acres. Its area is greater than that of the other seven wards combined. The bulk of the territory of Ward 8 is made up of woodland and shrubland, the city proper being in the other seven wards. Ward 8 contains the delightful summer resort known as Magnolia. This resort derives its name from Magnolia Swamp, the only spot in New England where magnolia glauca is found in a wild state. The famous Coffin's Beach is also in this ward.

The General Court four years ago placed a close time of five years on small game in the territory east of Ward 8. This protects the seven wards of the city and the town of Rockport. Two years ago the town of Essex, which joins Ward 8 on the west, was protected, so that the gunners from a population of about forty thousand are turned loose in Ward 8. The extermination of nearly

all the game, and of great numbers of song-birds, has been the result of this peculiar legislation.

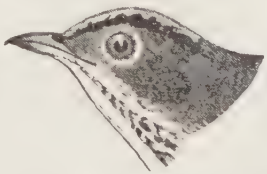
All the wild things are desperately wild. The red squirrel if he hears the report of a gun instantly rushes to a hiding-place. Well

INDIGO-BIRD.

he knows the deadly meaning of the report. He has turned day into night, and now harvests his nut crop in the night-time. I sleep in the open air, and during the harvest season I listen for hours to the sound of dropping nuts which the industrious but wary squirrels

are cutting from the oak-trees around my cabin.

Bismarck is still in the land of the living, although ten years have passed since he first introduced himself, and requested me to book him for table board. He has cost me many dollars, while he has not paid a cent in the coin of the realm. However, I owe him for teaching and am ready to balance the books and exchange receipts.



OVEN-BIRD.

I know that my position in relation to the red squirrel's destruction of song-birds will be sharply criticized by those who believe in the squirrel's total depravity. But the truth is that I describe wild life just as I find it, not as some books say I ought to find it. If

the red squirrel was as destructive as reported, there would not be a young bird reared around my cabin. My notes show that last year the following named birds nested near my cabin, and probably every nest was known and visited by the red squirrel:

	Number of nests.
Chestnut-sided warbler	3
Black-throated green warbler	1
Oven-bird	2
Vireo	4
Canada fly-catching warbler	1
Robin	2
Towhee-bunting	2
Catbird	1
Wilson's thrush	2
Indigo-bird	1
Total	19

A ruffed grouse nest was looted by the crows when it contained but four eggs, after which the bird resorted to a swamp, and reared a brood.

Several of the nests named were destroyed, but none by the squirrel. In the light of my observations I cannot consistently denounce the red squirrel.

BLACK-THROATED GREEN WARBLER.

V.

CHANGES IN HERMIT-LIFE

For several years I had slept in a hammock without a roof to keep off the night air. I had found this method inconvenient on account of stormy nights, when I was obliged to seek the shelter of the cabin. I overcame the difficulty by putting a tent roof over my hammock. The sides and ends were open so that I was practically exposed to the night air. The tent roof protected me on stormy nights, and with this slight shelter I slept outdoors from April 1st until Christmas, unless there was a heavy fall of snow, meantime.

I found it inconvenient to cook my breakfast, and then, after eating it, go to the city. Why I did so was on account of my coffee

habit. I had tried to find a good cup of coffee in the city and had failed, so had depended on my own brewing.

One morning I dropped into the little store at the head of Pavilion Beach, and the proprietor asked me to have a cup of coffee. He piloted me into a back shop, where he told me that he served a light lunch with coffee, to the farmers. The coffee was just to my taste, and for twelve years I patronized the coffee trade in that little back shop. My note-book shows that during the twelve years I had missed only eighty mornings. I had paid six hundred and forty-five dollars, during that time, for my lunch and coffee, and had walked, on account of my breakfast, seventeen thousand two hundred miles. Whew! It makes me feel poor and tired to recall it. I do not remember that I remained at home to breakfast on account of a storm. The eighty mornings which I missed in the twelve years were accounted for by absence from the city.

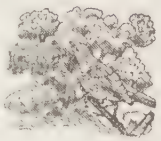
I would leave my cabin, summer or winter,

at half-past five o'clock, so I could sit down to breakfast in the back shop about six.

In the winter months it was dark at half-past five in the morning, but that did not disturb me. I did not use a lantern because I would not be bothered with it, and for another reason. It made one a bright and shining object for early ghouls or tramps.

For some years past I have discontinued my early morning tramps, but I love to recall the persistence with which I clung to habit. Those early walks afforded me much pleasure and some hardships. During the spring months the frogs and birds enlivened my morning walk with music. The bird-music along the route to the city was divided according to locality. Before leaving the cabin, from early daylight, there would be a variety of bird-songs. In numbers the veery led all the rest. Then followed the red-eyed vireo. After these, I could hear only one song each of the following species:

Catbird, towhee-bunting, chestnut-sided



CEDAR-BIRD.

warbler, robin, black-throated green warbler, oven-bird, wood-thrush, and warbling-vireo. Indigo-birds and cedar-birds some years could

THE NEW CABIN.

be added to the list, but they are erratic birds, and cannot be depended upon.

My route to the city was along the deserted old highway. When I had climbed the first hill (where my new cabin now stands), I could overlook a rugged territory where the fire and axe had exterminated the large trees, leaving a low, shrubby growth, just suited to the needs of the birds. The songs of the catbird, towhee-bunting, and robin were heard here, and, strange to tell, in a distant corner of the territory, could be heard the loud carol of the song-sparrow. A few pairs of these birds had changed their nesting site from pasture to shrub-land. I knew that these sparrows were descendants of my pet birds, Wabbles and his first wife. They were born in the woods, and so reared their children in the same surroundings.

The frog-pond was just beyond the hill, and when the toads and frogs did not drown their music, birds could be heard singing from morning till night during the nesting season.

There was a colony of Maryland yellow-

throats near this spot, and the sprightly song could be heard from May 1st to the middle of July. I have heard the song in September.

A short distance from the frog-pond, on the left, there is another pond, or shoal bog, where frogs and red-winged blackbirds appear to own the earth or water. Still farther along

MARYLAND YELLOWTHROAT.

the old highway, on the right, there is a walled-in territory, called the "Sheep Pasture." I think I could carry the grass in this so-called pasture in my hands. A mass of boulders and bed-rock, set off by barberry-bushes, comprises the view, but this rugged pasture (?) is the home of the field-sparrow (*Spizella agrestis*). This sparrow is not so common as the song-sparrow and bay-

RED-WINGED BLACKBIRDS.

winged bunting. I consider it a rare treat to listen to this sweet singer. I made it a practice, during the season of song, to stop by this old pasture, not only to hear the sparrow, but a brown thrush as well. The thrush occupied the other side of the old highway, and when he saw me coming, he would mount to the top of a small tree and sing so long as I remained to listen.

Farther along on the old road, a pair of redstarts could be found every spring. The male did his singing in a wild apple-tree. From this spot, down "Slaughter-house Hill," to Western Avenue, I found song-sparrows to be the prevailing bird. There were a few chestnut-sided warblers, robins, and catbirds.

The birds I have mentioned, that nest along the old road, look upon me with friendly eyes as I pass. When they return in the spring, they give a greeting which I understand, because the notes are in a higher key, and are never repeated through the summer. While passing daily over the road I have made it a practice to talk to the birds,

so many of them, not all, greet me as before mentioned.

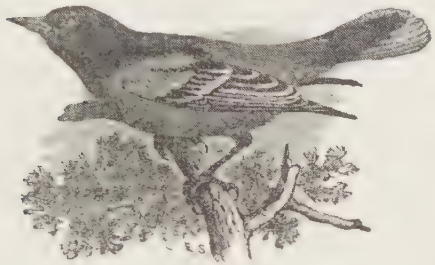
The brown thrush is usually more demon-

SWAMP SONG-SPARROW.

strative than other birds. His greeting is almost like the shrill cry of a small boy. Two years ago, when rounding a turn in the old road, I saw four thrushes before me. I stopped

BROWN THRUSH.

to observe them, when I heard behind me the laugh of a boy. I glanced back, but saw no one. Again I heard the laugh, and this time I located the sound over the wall, and started to call, when a male thrush flew to the top of a small cherry-tree, and, after



BALTIMORE ORIOLE.

laughing as before, gave me a song. This thrush was my old friend just returned from the South, and when he saw me looking at his mates, he called out to let me know where to find him.

Along Western Avenue the tall elms harbored many singers. The Baltimore orioles'

loud notes could be heard above other bird-songs. Linnets, chipping-sparrows, bluebirds, and bay-winged buntings were scattered along the route to the city. When I had reached the sea-wall, the gulls were the birds to attract my attention. Some were seen skimming the surface of the water, while others were anchored in large rafts. The gulls appeared to be fearless, and swung to and fro near the beach, but, just the same, the crafty birds did not approach near enough for a shot. They knew how far the modern gun could shoot, and gauged their flight accordingly. Whenever one desired to cross the highway to the marshes beyond, it would rise above gunshot before making the attempt. Besides the keen sense which the gulls possess, they carry themselves with true dignity.

From the first of April to the middle of November I looked every morning for my "lone fisherman." There was a stake near the drawbridge which a belted kingfisher had prëempted. For six years this feathered fisherman held that stake, while he had to face

almost all the travel in and out of the city. The nest was in a clay-bank that overhung the beach near Stage Fort.

It is needless for me to tell that I derived great pleasure from my daily association with

BELTED KINGFISHER, WATCHING.

the birds that nested along my route to the city.

The hardships which I have mentioned were encountered in the winter months, when storms prevailed. Cold starlight mornings were my delight. If there was snow on the ground it

added a new pleasure. I always enjoyed the keen, cutting air. Sometimes there were storms in the morning with rain or snow. At times, the wind would blow such a furious gale on the Cut, that it would make it nearly impossible to reach my haven. When safely housed at last, I always felt satisfied with myself, because of my victory over the elements. One storm forced me to remain in the city overnight. The storm had died out, but had created a sea such as is seldom seen even on the Cape. I went over to Bass Rocks, to see the waves break, and did not get back to Western Avenue until near night. I found the street full of snow and sea-water. I waded nearly to the drawbridge and then mounted the sea-wall. I soon found that the large waves broke over the wall, and with

KINGFISHER, STRIKING.

force enough to wash me overboard, so I turned back. The street was closed to travel afterward, by the city officials.

KINGFISHER LIFTING HIS CATCH.

During the summer weather I saw many strange sights when taking my morning walk. One morning, a pasture-rabbit tore along the

old road as if he were racing for life. He passed me without turning his head, and was out of sight around a turn in the path before I had recovered from my surprise. While I was looking, he came back, jumping high and long; after he had got by the turn, and nearly to my feet, he gave a great jump sideways, and landed in a clump of weeds. Just then a stoat came in sight on the rabbit's trail. His leaps were not expended in the air, but were swift, long, and near the ground. It was evident that the poor rabbit had no chance to escape from such a supple, bloodthirsty foe without help. When the stoat was out of sight, the rabbit again took to the road. He passed me, then turned into the woods. Whether he knew it or not, it was the best thing to do. It left the hermit to face his relentless foe. Perhaps the birds had told the rabbit that the hermit was a friend. The stoat came back, hunting both sides of the road. He understood just how he had been tricked. When he found the trail in the weeds, he circled around until satisfied that the

rabbit had returned to the road. When we met, he seemed surprised, but he tried to pass, spitting spitefully to frighten me. I drove him back, and managed to keep him from the rabbit's trail until it was too cold to follow.

I expect that this rescue established my reputation with the rabbits, for from time to time they came into my dooryard when chased by a mink or stoat. Whenever it occurs on Sunday there are visitors present, who are invariably excited for the welfare of the rabbit.

The stoat is the large weasel. It turns white in the winter, and is then the ermine.

Of all the incidents that happened during my morning walks, there is one that I cannot explain without resorting to a belief in hypnotism. I was on the way to the city when a turn in the path brought into sight a large mink, apparently coal-black. His peculiar actions caught my attention first, but soon I saw a ruffed grouse about twelve feet beyond the mink. Every feather on the grouse stood up, causing the bird to look as large as a small turkey. The mink was making

figure eights, moving from side to side of the grassy path, which was over five feet in width. His movements were so rapid the eye could see only a black streak. While I could not see the mink move toward the grouse, I saw that the distance between them grew less quite rapidly. Feeling sure that the grouse was doomed, for it seemed unable to do anything but follow the rapid motion of the mink, I stepped forward and gave a shout. The grouse flew away, and the mink turned on me and let out a yell that was fierce and loud enough for a tiger. He acted as if he meant to attack me, but thought better of it, and ran into a stone wall. From this safe retreat he yelled while I was in sight. This case puzzled me. It appeared almost impossible that such a wary, muscular bird as the grouse could be hypnotized. The mink was surely but slowly nearing the grouse when I interfered. I am sorry I did not remain quiet, and so find out if the grouse was able to fly away before the danger-point was reached. As it is, I remain in doubt.

"THE DISTANCE BETWEEN THEM GREW LESS QUITE RAPIDLY."

CHANGES IN HERMIT-LIFE

Returning from the city one morning in October, I turned off the old highway into the woods. I thought that some of the wood-folk would notice my visit and reward me with gossip for my note-book. I stopped to rest near a red squirrel's nest. The nest was in the top of a tall hemlock-tree and I was on the ground, but the proprietor knew I could climb, and so was eager to drive me away. He did not dare to attack me, for I suppose that sometime in his life he had worked the idea through his little head that man was too big and powerful to be whipped by a red squirrel, but he did the next thing. He flew into a passion and abused me in the expressive and vehement language common to this squirrel. He would run out on the limbs over my head and dance himself into a frenzy, and chatter and bark and shriek as if that would drive me away. He was wound up for a half-hour. After he had run down, he stretched out on a limb and silently watched me. Soon after, I heard a slight rustling of leaves, and a gray squirrel appeared from the underbrush

with an acorn in his mouth. The red saw the gray, but remained silent. The gray squirrel selected a spot and proceeded to bury the nut. When he had finished and was patting the dirt down, the red set up a great laugh. The gray cast one look aloft, and instantly his little paws were making the dirt fly. In less time than it takes me to write it, he had dug up the nut and had disappeared. I don't think the red squirrel thought to appropriate the nut. I think he enjoyed the joke which was on the gray. I know that I did.

A thaw in the winter made trouble for me outside of the sloppy walking. It brought out the skunk family, and each individual skunk thought he owned the old highway, and he did, when I met him. Many and many times I have had to climb through snow, or over ledges, to give the right of way to some sleepy old fraud, that did not know enough about man to be afraid of him.

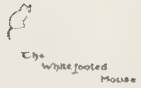
One evening I went to the well for water, and left the cabin door open. When I re-

"'HERMIT, YOU ARE OUT.'"

turned, I saw a big skunk climbing over the door-sill. I shouted, in hopes to make him turn back, but he looked at me as much as to say, "Hermit, you are out," and so I was. It was a cold, drizzly evening, and I was in my shirt-sleeves. It was a good half-hour before the scamp had satisfied himself that my stores were locked up. I was glad that he did not try his teeth on my cupboard. In that case I should have had to stop out all night.

VI.

THE WHITE-FOOTED MOUSE



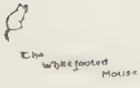
The white-footed mouse, unlike the house mouse, is a handsome fellow. He sports a chestnut coat, a white vest, reddish brown trousers, and white stockings. His eyes and ears are uncommonly large, causing his head to resemble a deer's in miniature. This resemblance has bestowed upon him the name of "deer-mouse." He is also called "wood-mouse," but is known to science as *Hesperomys leucopus*.

My object in writing about these mice is to call attention to their peculiar method of communication. I have summered and wintered them over fifteen years, and never have I heard one of them utter a vocal sound. They communicate with each other by drumming

with their fore feet, or, rather, they drum with their toes, for the foot in the act is held rigid while the toes move.

If any writer has called attention to this peculiar method of communication, it has escaped my reading. I am well satisfied that the habit has never been published before, so it must prove interesting to those who pry into the secrets of Dame Nature.

The white-footed mouse has taken possession of my cabin. Until a year ago the mice were kept in check by stoats, but for some reason the stoats have failed to appear, and the mice are increasing rapidly. I find their nests in every nook and corner. I go bareheaded the most of the time, so it happens that when I do need a hat I find it occupied by an enterprising mouse and her family. Now a few mice for company in the winter evenings would not be objectionable, but I draw the line when they become so numerous that I am forced to eat and sleep with them. They are too cunning and intelligent to be kept in check by traps. I have tried all kinds of traps, only to



find them useless. Last winter I bought a wire rat-trap — the kind with a trencher that tips and slides the rat into the space below. The trap was a failure. The mice were highly delighted with the contrivance, and from the first used the trencher as a door leading into and out of the trap.

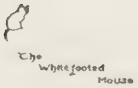
How does it happen that these shy inhabitants of the woods are more intelligent than the cunning citrat?

Some writers tell us that the lower animals cannot reason. In such case it ought to be an easy matter for man to outwit a lot of foolish little mice. I tried the experiment by fixing a wire to the trencher in such a way as to give me full control. When the mice were engaged on the food in the trap I pulled my wire and made it fast. The next morning my prisoners numbered twenty-eight. I was about to drown the lot, when several pets clung to the upper wires of the trap, and the mute appeal in their great wild eyes softened my foolish heart, and I thought it would be more humane to lose them in the woods. I carried

them nearly a mile from the cabin, and turned them out near some big boulders. I left a supply of food, and promised myself to feed them from time to time. Two nights later they were all back in the cabin. Upon investigation I found that they had followed my footsteps. I could see their tracks in the snow where they had trooped along in short journeys. At the end of each journey the tracks would disappear under a boulder or a tree, only to appear again, but always heading for the cabin.

I baited and fixed the trap, while the mice scampered about, evidently celebrating their return. I told them plainly that this was their last night on earth; that I had outwitted them once and would now outwit them again. But all my boasting came to naught. Not a mouse would enter that trap while the wire was on the trencher. The third night I removed the wire, and the mice entered the trap without fear.

Vainglorious man had pitted his wit against the wit of these little rodents, and the rodents



had triumphed. Every sportsman knows how it is. He finds the wild things just as intelligent and crafty as man with all his boasted superiority.

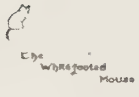
I desire to emphasize what I have already stated as to the peculiar method employed by these mice when communicating with each other.

If any one has been fortunate enough to have heard a vocal sound uttered by a white-footed mouse, I shall greatly like to hear of the fact. A daily and nightly knowledge of these little mice for more than fifteen years has led me to believe that they are completely dumb. They talk with their toes just as deaf and dumb people talk with their fingers, only they are guided by the ear instead of the eye. Proof that they are talking together is found in the fact that they go on with the drumming when in full view of each other. When calling to attract attention, they drum a long roll which corresponds to the halloo of the telephone. The answer is the same; afterward the rolls are variously interrupted. Through

the winter months the mice about my cabin look to me for food. By catering to their wants I have mastered their calls for food and water. I keep a loaf of bread on the floor, and it is no unusual thing to see a dozen mice eating and fighting around the food. Whenever I forget to supply the bread, the mice come out of their nests and drum the long roll, the call over their telephone, to attract my attention. If I am reading or writing and do not heed the call, they continue the long roll, drumming on books, tinware, papers, and on the wooden shelves. The moment I look up or speak, all hands drum the food-call, a long followed by a short roll.

The call for water is two short rolls. The danger-call is two long rolls drummed rapidly and vigorously. The young mice learn to drum when nearly full-grown, but understand and answer the drumming of the mother-mouse when quite young. I have had proof of this more times than I can remember.

An old mouse, a pet of long standing, on cool nights takes her family to the roof of the



cabin. The roof is warm and makes an ideal playground for the little ones. Here they race and romp until daylight, when the mother-mouse puts them to bed for the day. Soon after I hear the mice on the roof, early in the evening, the old mouse comes down to see if food and water are on hand. If she finds things all right, she takes a drink and then calls her family down. As near as I can make it out, she drums three rolls, a long roll between two short rolls. Anyhow, the young mice understand, and scamper down and drink and eat, after a harum-scarum fashion. The old mouse drums to me if there is no water in the dish. The young mice must hear this drumming, but pay no attention to it, which proves that they understand the different calls. The old mouse drums on the tin wash-dish, and her claws make a sound that rings out loud and clear. She drums first the long roll to attract my attention, and then drums the water-call. If food is wanted, she drums the food-call after attracting attention.

"IT CARRIES ITS VICTIM BY THE MIDDLE."

THE WHITE-FOOTED MOUSE

The white-footed mouse has a deadly enemy in the weasel family, the stoat, or ermine, which pursues its defenceless victims every month in the year. I seldom see a small weasel, but the stoat is common in this vicinity.

While a stoat is rearing its young, the life of the white-footed mouse is made miserable. By day and by night its bloodthirsty foe is on the trail. It is no unusual thing to see a stoat running along the wall back of the cabin with a mouse in its mouth. It carries its victim by the middle, and always reminds me of the picture of a tiger carrying off a Hottentot. Some of the old mice are quick-witted and full of resource, and escape danger, otherwise the species would soon be exterminated. There is an auger-hole in one of the logs inside the cabin that affords a mouse a safe retreat. Several times I have seen a stoat thrust its paw into the hole, only to jerk it out in hot haste. A drop of blood on the log would show that the mouse had defended itself with its sharp teeth.

There are three mice about my cabin that

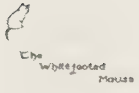
for years have managed to escape the stoats. Time after time I have saved the lives of these mice. The three are pets, and intelligent enough to know that I will protect them from their fierce and relentless foe. In the night-time, if hard pressed, they dive into my bed, while by day they sound the danger-call, knowing full well that I will come to the rescue and drive away their enemy.

To a stranger these mice look as much alike as peas in a pod, but for me they possess individualities as marked and distinct as could be found in three human beings. One of the three, the mouse that uses the roof for a play-ground, always nests under a stone wall just back of the cabin. Number two nests in the cabin summer and winter. When the weather is warm she makes a nest on a high shelf, but in cold weather her nest is on the floor under a pile of newspapers. Number three nests where I nest. When I sleep in the cabin, the nest of this mouse is always there. When I sleep in the open air, under a roof to keep off the rain, the mouse follows me, nesting under

newspapers or in a box which I supply. If she has a family when I move, it does not prevent her from following me. She makes ready a nest, and then takes her family to the new quarters.

For keen intelligence mouse number two takes the lead. All through the summer months she makes a nest on a high shelf in the cabin. When there is a fire in the stove the heat becomes oppressive in the top of the cabin, and the young mice would perish if it were not for the intelligence of the old mouse.

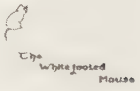
When I fill the stove with wood the old mouse understands just what will take place. She knows that I am about to kindle a fire, and she rushes to a shelf near the stove and frantically drums the danger-signal. She also does a lot of drumming which I do not understand. She tries to tell me in her dumb language that a fire will destroy her little family. When the mouse finds that I do not heed her appeal, she knows that her family will be destroyed, and can be saved only by



her own hasty efforts. The one thing to do is to remove her babies to a place far away from the death-dealing heat. If the young mice are small, in some mysterious way the mother-mouse induces each youngster to cling to a teat, when the whole family is removed in this novel manner to a safe retreat beneath the cabin. It is a comical sight to see the old mouse crawling along a log with eight or ten raw, shapeless things clinging to her like grim death. The hole in the wall that leads outside is small, and the old mouse has a long struggle to get her load safely through. Now and then a young mouse drops off and remains squirming where it chances to fall. The mother invariably returns and gathers in the missing.

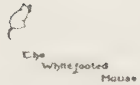
When the young mice are half-grown, they are removed in a different manner. They are now too large to be dragged as before. They are also too large to be carried by the neck. The mother overcomes this difficulty by doubling up the young mouse and then grasping it by the crossed legs. The young mouse

turns its head inward and holds it in place by biting on to one of its own legs. In this way a young mouse is made up into a round, compact bundle. When the hole in the wall is reached it often happens that the mother cannot push her load through. After several unsuccessful efforts she turns about and backs through the hole, dragging the load after her.



All in all, the white-footed mouse has afforded me much pleasure, but at times it becomes a nuisance. At one time my cabin was haunted by a strange sound. The sound was simple enough, only a sharp click repeated over and over. Sometimes, however, the performance would change to a succession of clicks. For six weeks I vainly tried to solve the mystery. At last the clicking became downright annoying. It would break up my line of thought when writing. It would confuse my mind when reading, and I often jokingly asserted that this mysterious ghostly click, click would send me to the insane asylum.

At last I traced the sound to a shelf where



I had placed an empty cigar-box. I investigated, and the mystery was solved. A dozen mice occupied the box as a safe retreat from their enemy, the stoat. Whenever a mouse entered or left the box the cover was raised, and, falling into its place again, made the click that had so annoyed me.

The box-cover was heavy enough to severely pinch a mouse's tail, but the cunning mice had provided for this danger. A hole about the size of a lead-pencil had been gnawed in the side of the box, just below the cover, and afforded a channel for the tail, while it was too small to attract the attention of a stoat.

A more cunningly contrived retreat from an enemy could not be invented. It shows that this wild mouse of the woods possesses intelligence which passes far beyond the powers of instinct.

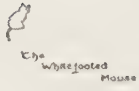
It would take a volume to record the incidents that have transpired in connection with these mice during the fifteen years of my hermit life.

Some of these incidents are comical, others

pathetic, and, alas! others are tragic. One in the comical line happened to a young man

MOLE.

from the city who thirsted for more knowledge of the wild things. He stayed one moonlight evening to see the mice eat. It often happened,



when the mice were gathered about a loaf of bread, that a star-nosed mole would appear and scatter them in all directions. If I chanced to be sitting near, it was no unusual thing for a mouse to run up my trousers-leg. I kindly allowed the young man the post of honor near the bread. Just what I expected took place. The mole appeared, and a frightened mouse rushed up the young man's trousers-leg. With a war-whoop that would have frightened an Indian, he bounded into the dooryard. The mouse escaped from beneath his coat-collar before he got out of the cabin. The young fellow danced around like a crazy man. Whenever his clothes touched him he thought the mouse was getting in its deadly work, and administered slaps that must have raised blisters. When I could control my laughter I told him that the mouse had escaped. I could not induce him to enter the cabin again.

The nests of these mice are globular, but are varied to fit the surroundings. Near the cabin they are made of bits of paper matted with

cotton-batting and a soft wool manufactured by the mice from my old clothes.

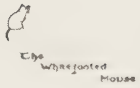
The nests remote from the cabin are made of bits of dried leaves, grasses, and plant-down. These last are usually placed in a tangle of catbrier. Many of these nests are occupied through the winter. I examined one last week. It was about five inches in diameter, and was composed of bits of leaves and milk-weed silk. It was rain and frost proof.

I sometimes find nests in tin cans. Once I found a nest in a paper bag. The paper bag was in a tangle of catbrier. It was nearly three feet from the ground, and doubtless was lodged where found by the wind.

The mother-mouse is devoted to the welfare of her little family, which may number anywhere from four to ten. When the young mice are small they are raw-looking things, but are tough, wiry, and tenacious of life. At this stage, full-grown moles would destroy a family in a few seconds, if it were not for the watchful care of the mother.

As the young mice grow they change their

coats to a dark lead color, which they retain until the first moult.



The white-footed mouse will eat about everything edible found in the woods. It is fond of mushrooms, and never, like human beings, eats of the poisonous varieties. I am sorry to state that it will eat young birds if small and helpless. It eats insects, berries, seeds, nuts, bread, cheese, and all kinds of meat.

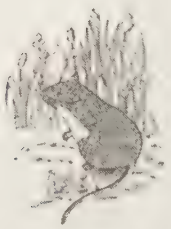
It stores up food for winter in holes in the ground and in hollow trees and logs. The mice about my cabin store food in anything that comes handy. I sometimes find a shoe half-full of nuts and corn.

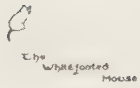
The white-footed mouse makes an interesting pet when caged. One that reared a family in captivity afforded me many proofs of intelligence.

When the cabin was too cold for the little ones she made them warm and cozy in a globular nest. If the temperature went up she removed the top of the nest, and if the heat from the stove fell directly into the cage she

piled up the surplus nesting material on the side to protect her young.

The mole that I mentioned before, the one that scatters the mice, is a singing mole. He zigzags about the cabin floor, picking up crumbs, while he sings birdlike notes that are as sweet and distinct as the canary's low twitter. I see other moles, but I have never heard but this one sing.





VII.

THREE YEARS LATER

The next spring, after my attempt to thin out the white-footed mice, the stoats returned. I did not molest them, and they reduced the number of mice in short order. Mouse number two had a little family in a nest on a shelf. They were mice-babies, helpless and sprawling. They were dragged out of the nest by one of the stoats, and were killed one at a time. The stoat was obliged to make three trips to remove the pile of dead mice. The mother had escaped by way of the stone wall at the rear of the cabin. After the slaughter was over, she returned and did a lot of drumming. I think she was reproaching me because I did not drive the stoat away. It made me feel guilty, but I had hardened

my heart, on account of a valuable manuscript which this mouse had purloined and reduced to scraps, with which to decorate her last nest.

The following morning I saw the mother come into the cabin with a baby mouse in her mouth. I thought it might be one of her own dropped by the stoat. But I was soon undeceived. The mouse left, and soon returned with another little one. This time I examined the young mice. They did not belong to my mouse family. They were strangers to me. The old mouse cared for these babies as if they were her own. I expect that the stoats had killed the mother, and my mouse had adopted the orphans.

The young mice increased in size rapidly, and soon took on the adult form and color. Then I recognized them. They were the gray *Hesperomys*, while my mice were the fulvous *Hesperomys*. The first is found in deep woods, the latter near farm-buildings and in the neighboring woodlands.

I don't know where their foster-parent

found the little imps, but it was a sorry find for her. As they increased in strength, it was evident that they conspired to take possession of the cabin. They worked in concert and fought in concert. While they were yet small the two would attack a full-grown mouse. If it chanced to be an old male, the little imps were sure to get mauled, until they would flee to their mother for protection. When full grown, they proved to be a match, single-handed, for any mouse in the cabin. Together, they were invincible.

The cabin became a battle-field every night. After a few weeks the white-foots were completely vanquished, and left. The two warriors drove their foster-mother outdoors, then for three months held undisputed possession of the food supply.

The white-foots are destructive gnawers, but the new mice could do more damage in one night than all the others could in a week. I had made a poor exchange. The two scamps were on friendly terms with me, and did not allow me to eat a meal without their

company. They would come at my call, and would have proved desirable pets, if it had not been for the gnawing habit.

I had made up my mind to kill them, for I knew it would be only a matter of time when they would destroy every book and paper in the cabin. I got rid of them, however, without resorting to violence. A young married couple from the city saw and admired the mice, and when I offered to give them away, gladly accepted the offer. I do not know what became of them, and do not care to meet any of their race.

In a short time the white-foots returned to the cabin, and are with me now. The foster-mother that was turned outdoors did not return. She was one of the missing, and so sacrificed her life, after all her care of two ungrateful imps.

VIII.

THE CROW

THE intelligence of the crow is admitted by those who deny reason to the lower animals. This bird is so large and is so meddlesome in human affairs that he has forced mankind to acknowledge his intelligence.

While I admire his ability to look out for number one, I do not believe that he is in any way beneficial to the farmer. In my opinion, he is a great deal blacker than he is painted by our wise men at Washington. After a lifetime knowledge of the crow, with ten years' close observation of his habits, I have nothing to say in his favor.

While farming in Maine I was a sworn enemy of the crow. Not because he pulled up my corn, thinned out my barley, and car-

KINGBIRD.

ried off my chickens; these things I could provide against; I was his enemy because he robbed birds' nests by the wholesale. It did not take me long to find out that this black imp prevented the increase of song-birds in cultivated fields and the adjoining woodlands.

I brought with me my hatred of the crow when I dropped into the woods of Cape Ann, and for several years I made life miserable for his kind with trap and shotgun.

Ten years ago, influenced by the articles in *Forest and Stream* on game protection, I laid aside my gun and devoted more time to the study of the wild things. The crows got the benefit of this change. I should have continued my warfare if the crows had plundered the birds' nests in my vicinity. King-birds nested near my cabin, and during the nesting-season crows and hawks were very careful to give the locality a wide berth. At other times the king-birds did not go far from home to attack the crows, and the latter made themselves at home in my dooryard, after I had ceased to persecute them.

Crows possess a language which enables them to communicate to each other anything that relates to crow-life. They can hold long confabs, and then act intelligently from evident conclusions.

In the years when I lived happily with my shotgun, before a divorce was decreed, I planted a bushel of potatoes in the woods on the west side of Magnolia Swamp. Fire had cleared the side-hill, and the prospect of a crop was good.

The crows gathered in some dead trees, out of gunshot, to criticize my work, and seemed to be highly elated. Raw potatoes are not down on the crow bill of fare, so I thought there would be a great disappointment when they investigated my work. The second day after I had finished planting I visited the spot, and found that the crows had dug up every hill on the south half of the field. There were three pieces of potato beside each hill, so the crows did not dig them up for food. Why they did so much hard work for nothing was beyond my knowledge of crow-life. I

nearly surrounded the other half of the field with white cotton string, and retired to the swamp to await the crows. Twenty minutes later a sentinel crow winged his way to a dead tree on the hill, and, after looking for enemies, called out, "Caw, caw, caw." Immediately eight crows appeared. They held a consultation, and it seems they decided that it was a good time to dig up the rest of my potatoes, for they started for the spot where they had left off. As this part of the field was under a high ledge, the crows could not see the string until they had passed the brow of the hill. The first crow over saw the string, and nearly turned a somersault in trying to stop his speed. He called out, "Cur-cur-cur. Cur-cur-cur," and instantly every crow returned to the tree. For ten minutes a great confab took place. The crow that had discovered the string was eagerly questioned by the others, and replied in a hasty and excited manner. After talking it over, a crow flew to the south end of the field, where he could look to the north and see the string. He re-

The Crow

turned and reported. Another crow flew to the north end of the field and stationed himself in a tall pine-tree. This crow soon discovered that the string did not surround the whole field; there was a wide gap in front of the pine-tree. He called "Caw-caw-caw-caw-caw," and the crows flew down to the tree. They were told about the gap, and one crow boldly flew through and acted as sentinel from a tree in the potato-field. The other crows soon followed, and began digging up the seed-potatoes. I think they tasted of every piece, with the idea that somewhere I had planted something good to eat. I shot two of the crows and hung them in the potato-field, but a week later I found the seeds dug up, with the exception of a few hills beneath the string.

The few hills left made quite a show two years later. They had produced a crop each year without being discovered by hunters. But when the weeds and shrubs made a rabbit-cover, "wild potatoes" were discovered on that side-hill, and I was soon informed of the

RUFFED GROUSE.

fact that the potato was growing in a wild state "away back in the woods."

I believe that crows destroy fully one-half the quail and grouse on Cape Ann. A woods fire south of my cabin burned the nest of a ruffed grouse late in the season. The grouse made a new nest north of my cabin, and one day I found four eggs in it. The next morning I heard a strange cry in the direction of the nest, and started to investigate. I took to the path at the rear of my cabin, and when I had reached the top of the hill I saw the grouse running toward me. She held one wing close to her side, but with the other she was striking savagely at two crows that hazed her as they flew above and around her. Just as I came in sight of the trio, the grouse dropped an egg from under the closed wing, and one of the crows seized it and flew so near me that I could see the egg in his bill. The thing that impressed me most was the silence of the crows. Not a sound did they utter. The scamps knew that I was near by, and would be warned of crow mischief if I

heard their cries. The cry made by the grouse was new to me. It was a wild cry in every sense of the word. The grouse, when she fled with her eggs, took the path to the cabin, and I think she did it for protection.

Last spring I saw something that added to my knowledge of crow intelligence.

Fuller Brook runs past my cabin, and after losing itself in a swamp, takes up its course again between high granite hills, until it falls into the sea at Fresh Water Cove. In the valley along the brook tall pine and hemlock trees make an ideal nesting-site for crows and hawks. Last spring I was much interested in a red-shouldered hawk's-nest which was in this valley. There were two crow's nests some twenty rods farther down the valley. One of my visits found the male hawk at home, and when he discovered me he flew in circles above the trees, uttering the loud scream that can be heard for a mile or more. Soon two crows came sneaking through the tree-tops to find out what was disturbing the hawk. The hawk flew to a tall pine, but continued his

cries after he had alighted. The crows flew to the same pine, and, taking a position near the hawk, began to talk to him in a low tone. It was evident that they were telling him that his loud screams would bring all the hunters of Cape Ann to the spot. The hawk continued to scream, and one crow, in a loud tone, called out, "Caw-caw-caw-caw-caw." Immediately five other crows appeared, and all attacked the hawk, striking at him with their wings until he ceased to scream.

The crafty crows did not care about the hawk's nest, but they did not intend to have the hawk publish the fact. Well they knew that a search would expose the two nests down the valley.

The red-shouldered hawk seems to be too slow and clumsy to wage war on crows, and the birds nest near each other, without trouble, only as I have related.

The crows in my locality have named me in the crow language. Two caws is the way the sentinel announces my approach to his mates.

The Crow

Several years ago I had occasion to pass every night a spot in the woods where dead horses are buried. The crows would gather there nightly, but always had a sentinel out. The sentinel took up a position in a tall oak on a hill where he could overlook all the approaches. When everything was quiet the sentinel called out, "Caw-caw-caw," which means "All is well." If a man approaches, the danger-signal is, "Cur-cur-cur," sometimes repeated, and it means "Look out there." It is uttered rapidly.

I noticed one night that the crow in the tree, as soon as he saw me, called out, "Caw-caw," and in a short time repeated the call. He had told his mates that the hermit was coming. My path passed within fifty feet of the crows, but they did not fly away. They had long ago found that I was not to be feared. Sometimes I had company, and the sentinel would then give the danger-call, "Cur-cur-cur," and the crows would fly away before we got in sight. I had this experience throughout the summer, so there could be no mistake.

This fall a young crow became quite familiar. He would call to me in the woods, "Caw-caw," and often fly near me. The old crows seemed to think he was in danger, or they thought he was departing from the ways of the fathers, and they always drove him away. They would beat him with their wings until he was forced into flight to save himself. This young crow had found food in my door-yard, and had heard the older crows say that "Caw-caw" was harmless, so he wanted to be friendly, no doubt with an eye to the food supply. I experimented with this fellow, in hopes that I could tame him, and learn from him and his mates something of the crow language.

As added to my knowledge of the young crow he proved to be a failure. I am now convinced that this youngster is not of sound mind. He utters the cry of a young crow, when calling for food, which shows that he has not acquired the crow language. The only exception to this rule is when he calls to me. Somehow he has been taught by other crows

The Crow

that my name is "Caw-caw," and whenever he sees me he calls out in an eager manner. Sometimes he steals away from his mates and comes to my dooryard. The crows hear him when he calls to me, and rush in, and with loud cries drive him into the woods.

There is another crow that "gobbles," and I have made up my mind that he is unable to utter the common cries of other crows.

A few years ago I followed this crow for two days. Not a sound escaped him other than the loud gobble. After this, I saw many things that convinced me that the crow was deaf and dumb.

There is another deaf and dumb crow about four miles away. He is located on the line between Gloucester and Essex.

Five years ago a Mr. Clark, a resident of Gloucester, told me about the last-named crow. Mr. Clark was ninety years of age. He was as straight and vigorous as a young man, and possessed a fund of amusing stories. He told how, when he went to his farm and found the crows pulling up his grain, the sentinel would

"THE NEXT SENTINEL TAKES UP THE CALL."

call out, "Clark, Clark, Clark," and then another crow would cry, "Bother-the-luck, bother-the-luck."

In the winter months the crows visit the clam-flats for food. A sentinel is sent down to the woods, overlooking the flats, and when the tide goes out, this sentinel returns, and, flying in a circle above the pines, calls out "Caw-caw-caw," continuing the cry until he has completed the circuit.

This cry can be translated into "Come-come-come," or, "Clams-clams-clams." Anyhow, the crows understand, and a sentinel flies to a pine-tree just south of my cabin. Another drops into a large oak-tree on the hill looking to the east. Two more sentinels seek trees for observation, one near the clam-flats. The crow near the flats calls out "Caw-caw-caw," which means "All is well." The next sentinel takes up the call, and thus it is carried to crows in the woods. The latter fly to the sentinel-trees, if there is nothing to create fear. If a man should approach either sentinel with or without a gun, the danger-cry

would be rapidly uttered. This cry "Cur-cur-cur," is usually quickly repeated, and the crows rush to the shelter of the pines.

Like human beings, crows have courts of justice. The jury, however, tries, convicts, and punishes the criminal. Sometimes I have witnessed these trials. Once, while sitting under a sentinel-tree, I saw six crows flying across the swamp, headed for the tree. Five of the crows were striking at one crow that was evidently trying to escape. When the crows reached the tree, the criminal was surrounded by the others. This was not to his liking, and he flew to an upper limb. One of the crows said something to him, and he answered in a loud, defiant tone. For ten minutes the trial went on. Each crow had something to say, while the criminal replied in the most aggressive style. At last the criminal seemed to be convicted, when he flew away with a string of caws that doubtless, in crow language, meant, "Go to hades, the whole blooming lot of you." One old crow shouted "Car-r-r-r-r," as much as to say, "I told you

so." The crows followed the criminal, and as they disappeared in the deep woods beyond the swamp, they were making it extremely warm for him. I do not know how the matter ended, but I am satisfied that the bad crow received severe punishment.

I have read in books relating to natural history, that crows are in the habit of playing games. I can only say from my observation that crows take life very seriously. I have seen nothing like play in a lifetime of careful watching.

Courting is a serious business. The male rushes at his intended, mauling her, while he utters loud cries, in which he rolls his r's in the most approved stage style. When he has forced the young lady to say "yes," they are mated for life. Then he becomes tender in his attentions. He will sit for a half-hour or more, singing the crow love-song. It is not much of a song, but it is the best he can do. He draws his beak down to his breast while he utters liquid notes that remind one of the suction of a wooden pump.

The Crow

This spring the kingbirds returned to Bond's Hill, and I hope they will nest near by. If they do, the crows and hawks will have to walk Spanish. Last season the crows destroyed many birds'-nests in the woods in the immediate vicinity of my cabin. One pair of robins had four nests looted. Only two towhee-buntings were reared, and two nests of the chestnut-sided warbler escaped. The destruction in so small an area shows how fearful the havoc must be on a large territory.

If the kingbirds do not nest near by, I shall continue the study of the crow at the muzzle of the shotgun, in defence of the song-birds that inhabit the woods around me.

Those that praise the crow can have but little knowledge of his destructive habits.

I sleep in the open air eight months of the twelve, and the crows awake me each morning before it is fairly light. For a half-hour or more they keep up a conversation in the crow language. They seem to be debating and laying out a programme for the day.

They must have a crow almanac, for they

know all about the tides. If the tide is out in the morning they seek the clam-flats without a report from a scout. At this early hour they make the flight without posting sentinels. If it is high water they go down to the seashore to see what the tide has brought in.

It is generally supposed that crows utter but one note, or cry, a loud caw. The fact is the crow language is not confined to one note, for "ker" is heard as frequently as "caw."

The cries of the crow can be modulated to express many of the feelings common to the human voice.

In the old times, when I killed crows right and left, I often threw dead birds into my cabin dooryard. If a crow passed over, his sharp eyes always discovered his dead comrades, and he would immediately circle above the bodies, repeating several times a cry, "ker-r-r-r," which most vividly expressed horror and indignation.

The Crow

IX.

LIFE IN THE WOODS

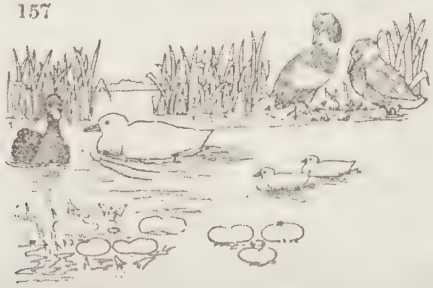
The first years of my hermit life were passed rambling the woods of Ward Eight, Rockport, Essex, and Manchester. I bought a double-barrel shotgun, not on account of the game to be found in the woods, but because I was told of the wonderful duck shooting in Ipswich Bay.

For three years there was a great supply of acorns, and gray squirrels swarmed in the woods of the Cape. The next four years were years of famine to all animal life that depended on acorns. The gray squirrels died off by hundreds, and the second year the most of the survivors migrated. Two years ago there was a great crop of sweet acorns, and some of the gray squirrels returned. As

last year was a nut year for bitter acorns, the squirrels would have become plentiful if it had not been for the gunners.

Ward Eight has been cursed by a State law. Rockport and the seven wards of Gloucester, on the east side of Annisquam River, and the town of Essex on the west, were given a close time on all kinds of land game for five years. Ward Eight was the only outlet for the gunners in a population of forty-five thousand. Every living thing wearing fur or feathers was shot at, song and insectivorous birds as well as lawful game. Almost total extermination has been the result of this unwise legislation.

One of my first ventures was a flower garden. I had trailed a few vines over the cabin, and had planted a small bed of favorite garden flowers. The summer visitors offered to buy the flowers, and I saw an opening for another year. I cleared away a small spot for a garden, and made me a hotbed, so the next year, and for the seven following years, I drove a thriving trade in cut flowers. This



flower business did not leave me much time for gadding the woods.

The care and sale of flowers, and my last trip to Ipswich Bay, decided me to discard my gun. The study of the wild things at the muzzle of a shotgun did not give me the satisfaction I thought I could obtain in some other way. I found the Bay shooting was expensive, and the birds, which were mostly coots, were not edible so far as I was concerned.

My last trip to Ipswich Bay convinced me that I did not care for such unsatisfactory dangerous sport. I had engaged a young man, and he had hired a gunning boat and decoys for one day. We embarked at the Cut Bridge about midnight. We rowed down the stream, and at daylight crossed the bar at the mouth of the river. While we were crossing the bar I saw several boats returning. I hailed the nearest to find out why they were coming back. "Too much wind," was the answer.

I should have turned back with the crowd,

"I SHOT TWO DUCKS."

but like most any other tenderfoot, I did not understand the danger. We anchored in the Bay, and put out our decoys. I was pleased to see that we had the shooting to

COOT'S HEAD

ourselves. Not a boat was in sight. I shot two ducks, and we slipped our anchor and picked them up inside of five minutes. When we essayed to return to our decoys, I found that the wind was kicking up a rough sea.

I think we were over an hour getting back to the decoys. After this the wind increased, and the choppy sea begun to look ugly. The boat took in water, and we realized that we were in danger of being swamped at any moment. The young man wanted to leave the anchor and decoys, and make for the bar. I was ready to go, but refused to leave the decoys. I knew that I would have them to pay for, and there was a good reason for taking them on board: they would help to keep the boat afloat. The young fellow bailed the boat, while I pulled in the decoys. We got under way, and for two hours we had all we could do to keep our boat from going ashore on the rocks. We did not get to the bar. At the end of two hours there came a lull in the wind, and we gradually worked the boat toward the bar. When we saw a big wave coming, we swung the boat bow on, and thus kept from being swamped. After a terrible struggle, we crossed the bar and made fast to a boat-landing in the river just in time to escape from a fierce tornado. If we

had encountered such wind while in the bay, some other fellow would have told this story.

I did not get home until after dark. Supper over, I turned to my note-book, and the record made was a sorry one. Expense three dollars, without a pound of meat that I could eat, or the memory of sport enjoyed, to offset, and besides, I had barely escaped with my life.

This I thought was due to my love of the gun. There was another waste of time which I laid to the door of the gun. I would feel uneasy mornings, until at last I would compromise with myself, by thinking that I would go out for two hours, and then certainly return and put away the gun. I am sorry to have to admit that it was usually the gloom of night that sent me back to the cabin. I hardly think that the gun should be held wholly guilty. My love for nature, and the keen enjoyment of finding wild flowers, little wayward brooks, or huge masses of bed rock hid away in the deep recesses of the woods, accounted for much of the time spent. How-

ever, I sold my gun, and did my hunting with note-book and pencil.

The pupils from the High School botanical class flocked to the woods about my cabin in search for flowers to identify and mount.

I was employed by the parents of some of these pupils to gather specimens and tag them with their Latin names. This method saved the pupil a lot of trouble, but it did not tend to advance the knowledge of botany. It occupied some of my time in the spring months, and gave me the pleasure of searching the woods without thinking that I was wasting my time.

It must be remembered that during my eighteen years of hermit life, I have been obliged to earn my living expenses, and to feed the wild things that come to my cabin dooryard as well. Referring to my note-book, I find that the last item foots up nearly four hundred dollars, but there are some rebates. I mounted one raccoon, many birds and squirrels, the receipts for which lessened the debtor side of the ledger.

I find that my note-book is filled with notes on flowers and other things besides birds. Early in the spring, or at other times, when the frost was coming out of the ground, I noticed that the stones, or small rocks, in the grassy highway did not fit their beds. There would be a space around each stone; the width of the space would be gauged by the shape of the stone. If the stone was conical, the space would be quite noticeable. If round, the space was much smaller. I suppose the cause was expansion, owing to the freezing of the ground. It was the water in the ground that expanded, carrying the dirt and rocks with it. Under the influence of a thaw, the rocks dropped back to their beds, leaving a space because the part of the rock above the ground is almost always smaller than the part underground. That is, a rock stands on its base and not on its apex.

Another thing that has puzzled me is the behavior of dead pine-limbs. One would suppose a dead limb ought to remain decently quiet and not move about like some living

thing. I had occasion to make a path through a thick growth of small pines. The dead limbs extended on each tree from the ground to a height of ten feet. I broke off the limbs so I could pass under them without trouble. After the path was completed, it turned cold for two days. When I undertook to pass that way during the cold spell, the dead limbs were so much depressed that I was obliged to break the path anew.

I experimented on dead limbs at different times, and found it was a fact that lifeless pine-limbs will fall in cold and rise in warm weather. I am unable to give a reason for this movement.

On my way to the city, the first wild flower to greet me in the spring is the snowy white bloom of the shadbush, or June-berry, as it is called here. It grows in great masses all along the old highway. Bond's Hill is pretty well covered with a variety unknown to any botany. I have referred this variety of the Amelanchier to some of our professors in botany. I suppose in time it will find its place in the

botanical works. It grows like the dwarf blueberry, fruiting when less than a foot in height. Some patches of this low variety cover two square rods or more.

After the shadbush is in full bloom, the other early wild flowers, that grow beside the old road, come into bloom in rapid succession. As I pass along to or from the city, I see in the distance patches of white which, if I did not know better, would lead me to think that I had discovered some beautiful low white flower. When I reach the spot I find it is spring everlasting (*Antennaria plantaginifolia*). I give the scientific name of this insignificant flower, because every spring scores of woodland ramblers bring it to me and ask its name. Early in the spring the flower is a very good white, but as the season advances, it becomes a dirty greenish white. The stem is cottony and the leaves, when young, are covered with a silky wool. With age, the leaves become green above and grayish below. One should make its acquaintance early in the

spring, before other and better flowers become plentiful.

There is a clump of bushes near the brook that attracts my attention early. It is the fly honeysuckle. The pale green leaves appear while other shrubs can boast only swelling buds. Later, its slender branches are covered with honey-colored bell-shaped flowers. The flowers hang in pairs, and are airy and graceful.

On a hillside, near the road, the slender but wiry wild columbine swings its Chinese lanterns above its humble neighbors, the starflower and the windflower. Near Western Avenue, where the bed rock overlooks the harbor, the cliffs are white with saxifrage. Scattered along the old highway may be found the common cinquefoil. Its yellow flower looks like a strawberry blossom, and strawberry blossom it is to most persons. If one is in doubt let him or her place the two side by side. The strawberry leaves are in three divisions, while the cinquefoil is in five. The stems of the strawberry are hairy, while the

stems of cinquefoil are clean, brown, and wiry. The silvery cinquefoil grows all along the roadsides of Western Avenue, from the Cut to the drawbridge.

In late spring and early summer the viburnums afford a mass of bloom that makes the old road look like a cultivated shrub garden. Here the wild roses are a blaze of color. I do not believe that there is another spot on earth where the wild roses can compete with those on Cape Ann.

The city end of the old highway in midsummer is white with the fragrant bloom of the sweet pepperbush. Then, too, the wild orange-red lily takes possession of the roadsides and waste places.

It is marvellous, that for one hundred and fifty years, this deserted old highway has maintained an existence.

Brave Old Road! You are gullied by frost and flood; you are worried by catbrier and choked by brambles. You are cursed by poison-ivy, and blessed by climbing woodbine. By night, yours is the highway of the

skunk, the weasel, the raccoon, the fox, the mink, the woodchuck, and the rabbit. By day, the grouse and quail seek your grassy spots for food, and your tiny brooks for water. Birds of all kinds nest and sing in the shrubby growth that borders your roadsides. May you never lose the wildness, which, for one hundred and fifty years, you have rescued from civilization.

I have mentioned poison-ivy and woodbine. It is easy to tell one from the other. Poison-ivy has three leaflets, and the woodbine has five. When leafless, examine the method of climbing. The stem of the poison-ivy is covered thickly with fine rootlets, while the stem of the woodbine is sparingly supplied with tendrils by which it clings and climbs.

Thoreau writes: "It takes a savage or wild taste to appreciate a wild apple." Again, "What is sour in the house, a bracing walk makes sweet. Some of these apples might be labelled 'to be eaten in the wind.'"

I suppose my taste must be "savage or wild," for I do appreciate wild apples. I

don't know the wild apple that Thoreau describes, but those that grow lavishly in the woods of Cape Ann are not to be despised. I think I am safe in claiming that one-half of the wild trees bear sweet fruit. Many of the other half bear cooking-apples as good, or better, than can be found in most cultivated orchards. I know of several trees that bear fruit resembling the Baldwin in color and taste, and not much inferior in size. In a secluded spot, where a ledge on one side and a dense mass of catbrier on all other sides hides it from prying eyes, stands a wild apple-tree. Its fruit has no peer in woods or orchard. It is large, with a thin skin greenish-yellow in color. To the taste it is slightly acid, with a rich spicy flavor. Only three wood-folk know the secret of this wild apple-tree. A grouse, a rabbit, and a hermit. The grouse nests just over the ledge, the rabbit has a burrow underneath the mass of catbrier, and the hermit nests in the open air, and lives close to Nature, too.

Sometimes farmers with orchards offer to

load me with windfalls, and are incredulous when I tell them that I have an abundant supply of apples, as good as those on their best trees. I am the proud owner of an orchard as well as the farmer, and my orchard gives greater enjoyment. The farmer visits his orchard to see how the fruit is setting. It is a humdrum affair. He walks down this row and up that, so the inspection is soon over. It takes me several days to inspect my orchard, while each night I return loaded with wild flowers and experience. There are no stiff rows to follow. My orchard is laid out without regard to quadrangles or triangles. It is Nature's plan, engineered on a grand scale, to supply the wants of the greatest number of her wild children, the mice, rabbits, grouse, robins, quail, squirrels, and woodchucks.

Where cattle are pastured in the woods, the evolution of an apple-tree, as described by Thoreau, is going on now as it did in his day. During the eighteen years of my hermit life some of the trees have emancipated them-

selves, and now toss their branches above their old enemies. The cattle, however, coolly appropriate the fruit of the trees they had so persistently tried to browse to death.

X.

MR. AND MRS. CHEWINK

It was a May morning, clear and warm, the time was half-past five. It was my breakfast-hour and a pert chickadee had just whistled "Tea's ready," to the other birds, when I heard in the bushes near by a bird voice call out "Chewink," in answer to the chickadee. My breakfast-table was a dry-goods box and this morning it was under a pine-tree. A newspaper served for a table-cloth. Breakfast under the pines was a grand affair, and I was sorry when a year later I had dropped the custom for a breakfast in the city. When I sat down to breakfast my woodland orchestra was in full swing. The musicians numbered one song sparrow, one robin, one chewink, or towhee-bunting, one catbird, three

veeries, two wood-thrushes, and a chestnut-sided warbler. While I was sipping my coffee, and reading in Thoreau's "Maine Woods" how to make tea from wild stuff, I

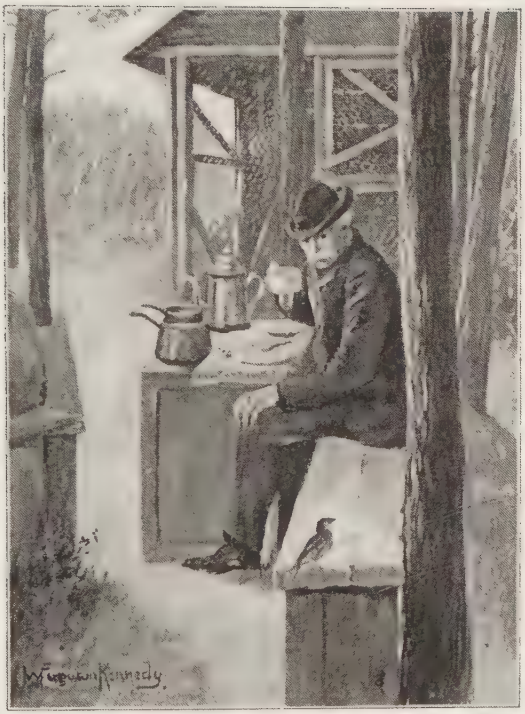
CHICKADEE.

again heard the bird voice call out "Chewink." I looked up and saw a female chewink on the end of the plank seat, not ten feet away. She had hopped into sight and had introduced herself by announcing her name.

In some way, this little wild bird had discovered that I supplied free food to the wild things, and she had called on me to establish friendly relations. I threw a bit of cookie to her and it rolled to the ground. She hopped down, found the food, and ate it on the spot, then looked up for more. I gave her another piece which she carried to the bushes.

My dinner hour was three o'clock P. M., two meals instead of the usual three. Miss Chewink was on hand and she was not alone. She had brought along two young gentlemen, who cared more about showing their fine clothes than they did about eating. They strutted around with their tails spread out like fans, and I was soon convinced that they were rivals. The little lady ignored them completely, while she dined with me as freely as if she was not a self-invited guest.

I suppose it would be the proper thing to describe my guests. The chewink, or towhee-bunting is nearly two-thirds the size of a robin. The male has a coal-black head, black wings and tail. Below he is white with orange



"I THREW A BIT OF COOKIE TO HER."

sides. His eyes are red like the dove's. The tail when spread is bordered with white. The female is a warm brown where the male is black, otherwise the sexes are alike.

After dinner my guests departed. Later I looked them up. The female was perched on a horizontal limb, while about ten feet away the two dudes strutted and spread their wings and tails, in an effort to affect the choice of the demure maiden. For three days the rivals showed off before the little lady in brown and orange. The morning of the fourth day only two of the birds came to breakfast. The little lady had made her choice, and was now a bride. The other suitor had disappeared, perhaps to look up a second choice. Housekeeping was a failure with the newly wedded pair for two years. Nest after nest was looted by snakes until the third year. That year the birds reared a family of four. Mrs. Chewink was very industrious, and worked early and late gathering straws, rootlets, and bits of weed-stalk for a nest. Mr. Chewink turned out

to be a lazy, good-for-nothing, shiftless fellow. Not even a feather did he carry to the new home. However, he had one redeeming quality, he could sing. Somehow, his song seemed to fit into the glorious spring mornings, and the listener felt that it was in perfect harmony with wild flowers, with the drowsy hum of insect life and the tinkling notes of the woodland brook. When the little ones were out of the shell, Mrs. Chewink had all she could do to supply their wants. She carried bread from the dooryard, and gleaned bugs and beetles in the flower garden.

I was deeply interested in the food selected by Mrs. Chewink. As for herself, she would never eat bread when she could get cup-cake. I expected that she would feed this favorite food to her babies, and that the sweet food would kill them, or make them sick, if no more. I watched carefully, intending to remove the cake before the little ones were injured. The morning, on which I had pitched to try the experiment, proved to be rainy.

The wet grass and foliage made it difficult for the little mother to collect food, and I thought that that would cause her to fall back on the cup-cake. As soon as she found the cake, she stuffed herself and carried a load to her babies. I followed, and when I had reached the nest she was feeding the last of the cake. From what I saw, it was evident that she had divided the food fairly. I returned to the dooryard, and Mrs. Chewink followed me. She passed by the cake to load up with bread. The next trip was made up of bread. The fourth and fifth trips were gleaned from the flower garden. The sixth trip was again made up of cup-cake. The next trip she carried bread, and then I removed the bread. When Mrs. Chewink returned, she looked for bread, but did not offer to take cup-cake in its place. She flew to the garden and hunted up insects. I tried a great many experiments with this bird, and I found that she would not feed enough cup-cake to injure her babies. When they were older and stronger, she fed more cake to them.

Here was a little wild mother that knew better than to feed to her babies food that she dearly loved herself. How did she know that such food would hurt them? Well we know that the wild things manage their domestic affairs in a way best suited to their needs and natures. But it is only here and there that a human being can gain the confidence of the wild things so far as to share the secrets of their lives.

Mrs. Chewink, like many human mothers, was overworked during the warm weather. Often she would seek the shade for a few seconds' rest. Her open bill and drooping wings gave evidence of how much she was suffering from the heat. All this time Mr. Chewink haunted the cool, shady spots, and left his clamorous family to the care of his overworked wife. The little ones increased in size very fast, and soon were as large as the old ones. One morning Mrs. Chewink brought the brood into the dooryard. I think she wanted to be near the food supply. Cer-

tainly it lessened her labors. She had another object in view, which appeared later.

Two weeks passed, and one morning Mr. Chewink brought the young birds to the dooryard. I was much worried, for I thought that my little pet had been killed. I searched the shrub-land on the hill, and was delighted to hear her call. She was gathering material for a new nest. Then I understood why she had brought her family to the dooryard. She had contemplated putting them under the care of her lazy husband, and she thought that he would not be overworked where food was so plentiful.

The young birds did not take kindly to Mr. Chewink's care. When they found that he was their sole dependence, they made his life miserable. They followed him with open bills and fluttering wings, clamoring for food. Mr. Chewink acted like a crazy bird. He would fly round and gather food and jab it into an open bill, often, in his reckless haste, knocking a little one off its feet. I pitied the poor birds, but there was a ludicrous side

to the whole affair. It proved that bird nature and human nature are much alike.

A little miss, who had come from the city with her parents, was much interested when I told her that the birds were Mr. Chewink's babies. She looked on while the babies clamored for food, and when Mr. Chewink knocked one of the little ones over in his rough, impatient way, the sympathetic miss cried out: "Oh, mamma, how cross he is! He is just like papa when the baby cries."

After awhile Mr. Chewink changed his tactics. I think he had grumbled to his wife, and had threatened to let the hawks get the little beggars, so she told him how to induce them to pick up their food. Mr. Chewink took the hint, and dropped food before each bird, and probably said, "Help yourself or starve." The poor things did get right down hungry before they found out that they could feed themselves. Another feature of bird life was brought to my attention two days before the second brood was hatched out. Mr. Chewink enticed the young birds away to a bird

resort. This resort is a place where there is food and water, and many birds that rear two broods take the first brood to the spot, so the mother-bird can feed the second family unmolested. Mr. Chewink visited the banished birds several times each day. The bird resort was near a little pond on my road to the city. One of the young birds was bright enough to remember me, and intelligent enough to follow me to the cabin. His father found him in the dooryard, and pecked and beat him and drove him into the bushes. But the plucky little fellow insisted, and remained in spite of the whippings he got from his father. I returned from the city one afternoon, and found a black snake had swallowed the second brood, and was sleeping it off on a sunny patch of bed-rock. I killed the snake. The next day the banished birds were brought back.

Mr. and Mrs. Chewink

Mrs. Chewink remained about the dooryard most of the time. She would go after berries with the rest of the family, but her stay was short. At meal-time she would hop on the

table and look the food over. If she discovered cup-cake, she helped herself without ceremony. After dinner, she would preen her feathers standing on a rock near where my writing-table stood. I liked to have her round, for she seemed to be more like a human being than a bird. After the breeding season was over, the old birds shed their feathers, and sorry-looking objects they were. Mr. Chewink appeared to hate the sight of his wife, and he abused her most unmercifully. He pecked her, and would not let her eat until he had satisfied his own appetite. At one time, I threw a bit of cooky to Mrs. Chewink, and it chanced to fall behind a box. While she was eating it, I heard the male calling from the bushes, "Towhee, Chewink," and soon he came flying into the yard, to see, perhaps, if any dainty morsels were about. Mrs. Chewink left her cooky and sauntered from behind the box, as if there was nothing to eat in that spot. She made a great pretence of eating dry corn and flour bread, but I don't believe the artful thing swallowed a

morsel. Mr. Chewink was just a bit suspicious, and hopped toward the box, but seeing his wife eating, he turned back to investigate. When he found she had only common food, he flew at her, pecked her severely, and then flew away. Mrs. Chewink returned at once to her cooky. I saw then that this wild bird could reason. She had exercised thought to control action, with a definite object in view. The first of November turned clear and cold. There was a hint of winter in the air by day, and the nights were frosty. The chewinks lingered awhile, but the cold was too severe for them, and at last it drove them south. The next spring Mrs. Chewink did not return. Mr. Chewink soon found a second wife. I do not know what became of my pet. The chewinks are shot in the Southern rice-fields, and it is always uncertain about a particular bird coming back in the spring. Association with my little bird for three seasons had led me to become so attached to her that her loss really gave me a heartache.

Mr. Chewink did not return the next year,

and I was not a mourner. He was tame enough to take food from my hand, although he would not hop on to the table, but his disposition made him distasteful to me. He abused his wives and children, and was as selfish as a hog.

Last year the chewinks did not rear a family, owing to the crows. The year before they were successful in rearing three babies from the first brood. The crows got the second brood. The intelligence of the young birds have caused me much surprise. I have made it a practice, while writing out-doors, to be well supplied with bird-food. Usually there is a loaf of bread wired down in the dooryard, but the birds will not eat from it if I will throw to them bits of cooky, cup-cake, or doughnut. The old birds hop out of the bushes, twenty feet away, and make a peculiar chuckling note, down in the throat, to attract my attention. If I throw food, they scramble for it. They will come to my feet for the food. When the three babies, mentioned before, were full-grown, they were

brought by the old birds to the bushes near the dooryard. The parents, both male and female, carried bread, and the food that I supplied, to the young birds. When all were satisfied, the whole family flew away to the patches of huckleberry-bushes. While writing one morning, I was surprised to see one of the young birds hop out of the bushes to eat from the loaf of bread. He soon tired of the bread, and hopped toward me. When he had approached within ten feet, he stopped, and made the same notes in his throat common to the old birds when attracting my attention. I threw to him a piece of doughnut, which he took to the bushes. Three times he returned for food. That day the other two went through the same performance. Did these birds learn the trick by watching from the bushes the manner in which their parents got the sweet food from me? Or, did their parents tell them what to do? We must remember that these little wild things were only a few weeks old, and however we decide, it appeals to us as an exhibition of intelligence

that would be wholly impossible to a human being of the same age.

The English sparrow has not found its way to my cabin. I suppose it is too far in

ENGLISH SPARROW

the woods for these city dwellers. Some boys, of a Sunday, brought to me a young English sparrow which they had rescued from a cat. They found the bird near the old barn on the hill just above Western Avenue. The bird

was injured in both wings, with body wounds beside. I thought the bird was dead, and placed it on a seat near a tree. Shortly, a lady visitor said, "Your bird is coming to life." Sure enough, he had got on to his feet, but was sadly crippled. I gave him some crumbs, and he ate a hearty meal. It was evident that he did not intend to starve to death if he could get food. That night he hopped over to the cabin and climbed the banking to where he could get into a barberry-bush. He could not move his wings, but his feet were all right. The next day he hopped to me for food and water. I fed him, then put him on a rock where he could find water for himself. He did not forget the spot. For three days he followed the same methods, sleeping in the barberry-bush every night. The fourth day, while I was feeding him, an old chewink hopped to the loaf of bread and called the sparrow. The sparrow did not respond at first, but after awhile hopped over to find out what the chewink wanted. He seemed surprised to find the bread, and began

at once to help himself. The chewink called him into the bushes. I suppose he intended to give him an introduction to his family. The next day the sparrow came into the door-yard alone. He made for the bread and did not look at me. I tried to catch him, but he hopped into the bushes, apparently filled with terror. I think that old chewink had told the sparrow that I was a very bad man. The old fellow might have been jealous, and had frightened the young sparrow, so that he would fly from me in wild alarm. The next time the sparrow visited the yard the chewink was with him. They departed together, and three days later I saw the sparrow near the old barn. He was with other sparrows, but he knew me, and, more than that, he had lost his wildness. He would eat from my hand. It was evident that the chewink had piloted him three-fourths of a mile to his friends. The sparrow had to hop all the way. The old chewink must have exercised much patience to have accompanied the sparrow in such a slow way. How did the chewink know where

to take the sparrow? Did he do a deed of charity by restoring the lost one to his friends, or did he entice him away for selfish purposes? It is barely possible that he might think that

SPARROW.

the sparrow would recover his wing power, and would go out and bring in his uncles and his aunts, so took him out by devious ways that could not be held in the memory.

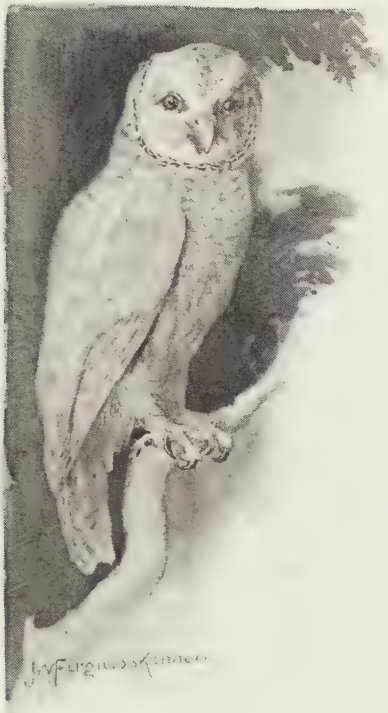
XI.

SOME OF THE WILD THINGS

On Sunday, May 30, 1897, while the church bells were calling saint and sinner to worship in the city of Gloucester, and a catbird's blithe music, supplemented by the silvery bells of a veery, was calling me to worship in my cabin dooryard, I turned to the path that leads to Magnolia Swamp.

Two years before, on the west side of the swamp, I had discovered a woodpecker's sap orchard. For two seasons I had carefully noted the work of the woodpeckers in their curious method of tapping trees, and I desired now to add to my knowledge by a few hours of observation.

It was a glorious morning, bright with sunshine, tempered by a crisp air. It was one



"FOUND HIS OWLSHIP ON A LOW LIMB."

of the few sunshiny days rescued from a cold, rainy spring month. The trees were forward, and for the most part covered with full-grown leaves. The white oaks were late, as usual, their leaves were tiny, and at a distance looked to be a silvery gray in the sunshine. The hillsides west of Magnolia Swamp were lighted up by this immature gray foliage, while here and there the dark green of the pines afforded a pleasing contrast.

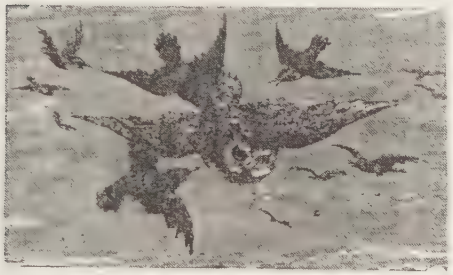
I found the sap orchard deserted. The trees, red maples and canoe-birches, were dead or dying. The sapsuckers and their self-invited guests, the humming-birds, had drained the life-blood of their helpless victims. All of the maples were still standing, but many of the gray birches had been broken off by the wind just below the belt of punctures.

While I was searching for another sap orchard, I saw a barred owl, with something in his bill, fly to a grove of small hemlocks. I followed on my hands and knees, and found his owlship on a low limb. Evidently this was his breakfast-hour. The thing in his bill

proved to be a leopard frog. He was preparing to swallow the frog by crushing the bones of the legs and joints. He did not see me, or, if he did, he ignored my presence, and continued leisurely to prepare and swallow his breakfast. Afterward he spent several minutes preening his feathers before settling down for a Sunday nap. A pair of saucy chickadees, scouring the woods for a Sunday breakfast, discovered the owl and gave the alarm. Inside of two minutes I counted thirty-six birds, all called together by the cries of the chickadees. These birds included cuckoos, warblers, blue jays, thrushes, vireos, flycatchers, and buntings. How they did jeer and abuse the owl, but all were careful to keep at a safe distance. The blue jays seemed to be filled with fury, and if birds can swear, doubtless that owl listened to some very emphatic language.

For twenty minutes that patch of young hemlocks contained noise and life enough to stock a first-class aviary. The owl seemed bored, but was apparently fearless.

Thirty-two minutes after the first alarm, all the birds had disappeared, excepting two red-eyed vireos. The vireos continued to scold vigorously. The owl had intruded on their nesting-ground. Not twenty feet away a



OWL CHASED.

vireo's nest swung lightly from the horizontal limb of a red beech. It seemed to me that the owl suspected the presence of the nest, for he thrust out his head and swung it from side to side as if searching for something. After awhile he discovered the nest, and flew to the

beech limb. When he had commenced to approach the nest by short hitches along the limb, the vireos changed their scolding to cries of alarm. Immediately all the birds returned. Again the owl was told that he was a robber and a great rascal by every bird in the grove. As he continued to approach the nest, I thought it time to interfere. "Hold, there!" I shouted, and the effect on the owl was instantaneous. He stopped short, crouched on the limb, then twisted his impish face directly into the back of his neck, and glared at me with a frightened look in his wide-open eyes. After a brief inspection he tumbled forward off the limb, caught himself on his wings, and floated as noiseless as a feather into the dark shadows of Magnolia Swamp. I examined the vireo-nest and found it empty — in fact, it was not yet completed.

It was evident, from what took place, that birds of different species can communicate with each other.

First, the chickadees call other birds to the

spot by cries that certainly are understood to mean danger.

Afterward, the vireos did the same thing. While the latter were scolding the owl, other birds paid no attention, but responded at once to their cries for help.

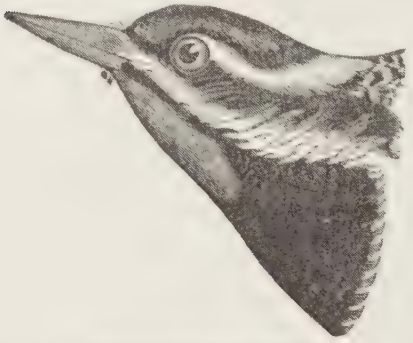
After the owl had disappeared, the birds scattered as before. The blue jays and two thrushes stopped back to interview me, and find out if my intentions were friendly.

When all the birds had disappeared except the vireos, I went in search of a new sap orchard. I soon found a clump of red maples containing two trees that had been tapped by woodpeckers. The belt of punctures on both trees was nearly a foot in width, but the woodpeckers did not show up during my three hours' tarry.

This woodpecker, the yellow-bellied (*Sphyropicus varius*), does not nest on the Cape, so had doubtless departed in migration, but three humming-birds were fighting for the sap-buckets, and a red squirrel settled matters

by driving the hummers from one tree to the other.

The red squirrel was a new feature in a woodpecker's sap orchard. He did not cling to one spot, as squirrels do when tapping for



YELLOW-BELLIED WOODPECKER.

themselves, but instead moved rapidly around the tree, thrusting his tongue into the drills for the sweet sap. I suppose the squirrel owned the territory where the maple-trees grew, and was more than willing that the

woodpeckers should tap the trees for his benefit.

The drills made by the woodpecker extended through the outside bark and into the cambium layer. From my observation with a good glass, during several seasons, I found that the woodpeckers were after the elaborated sap that descends from the leaves, through the inner bark, and did not extend the drills into the wood where they would reach the crude sap flowing up from the roots. The wisdom of this procedure was evident. The elaborated sap is far richer in nutriment than the crude sap, and the woodpeckers knew more about the growth of trees than many human beings, so worked understandingly.

Each drill is made deep enough to hold about two drops of sap. The upper drills are the only ones to afford sap, which proves that it is certainly the elaborated sap flowing down from the leaves that the birds get.

I had read in works on ornithology that the woodpeckers tapped trees so that the sap would attract insects upon which they could

feed. Also that the birds were after the soft bark, or cambium layer, for food.

While the woodpeckers do catch a fly now and then, it is evident, even to a careless observer, that it is the sap that is sought. I have seen them eat small pieces of the cambium layer, but I think they did so because the soft bark was soaked with sweet sap.

The three humming-birds made that little sunny glade in the forest as lively as a Mexican fandango. The two males were jealous of each other, and both birds seemed desperately in love with the demure maid. She attended strictly to business by drinking from the sap-buckets left unguarded by the red squirrel. The male hummers spent most of the time dancing in the air. They took turns in madly pursuing each other; the pursued never turned tail, but flew backward with a swiftness that was marvellous. The buzzing of their wings and their shrill cries furnished the music for the wild dance.

The humming-birds drink from the drills while poised in the air, but often alight and

cling to the bark while drinking, the wings closed and silent.

Flies and hornets were in evidence, crawling on the bark of the maples, or flying around the drills. A hornet stung the squirrel on the ear. When I left, the latter was shaking his head and telling the hornets what he thought of them.

When I returned to the cabin, I found a pair of catbirds in trouble. They nested in a dense mass of shrubbery about eighty feet from the dooryard. The male catbird met me some distance from the nest, and by his excited cries I knew that some bird enemy was near at hand. When I came in sight of the nest I discovered the trouble. A black snake was making his way through the bushes toward the nest, and the mother-bird was waging a fierce but fruitless battle.

I killed the snake, which was over five feet in length. The nest contained four eggs. For the time being they were safe.

In due time the nest contained four baby catbirds. One moonlight night, about ten

o'clock, there was a great outcry from the old catbirds. I had gone to bed, in my hammock, in the open air, with but a roof over me to keep off the rain, so I could hear the birds and knew that they were fighting to save their little ones. Before I could go to the rescue, one of the catbirds flew to the bushes within three feet of my head, and frantically called to me for help. When I came in sight of the nest I saw a snake drop to the ground. One of the young catbirds was missing. A hurried search beneath the bushes in the dim light was unsuccessful. The snake had silently and swiftly disappeared with his victim.

The old catbirds were pets of mine of several years' standing, and the tragic fate of the baby-bird caused me to try to save the other three. I removed the nest and placed it in a covered box in the cabin. The catbirds followed me to the cabin door, but made no protest. The next morning before sunrise the birds awoke me by their cries. When I was dressing they spent the time flying to and fro, from cabin to hammock, calling to me to

hurry up and bring out their babies. Both birds had insects in their bills. I did not take the nest to the old spot, but instead placed it in a clump of bushes near the cabin. When I had secured the nest, the old birds gave the three babies their breakfast. This programme was followed day after day, until the young birds were old enough to fly.

About two hundred visitors one Sunday inspected the nest, and the old birds did not make a protest or show fear. They knew that I would protect their little ones. A clear case of bird intelligence.

Returning from the city, while the catbirds were rearing their young, I heard a great outcry from a number of birds in the cabin dooryard. At first I thought some bird enemy had destroyed the young catbirds, but I found them all right. Just over the wall in the bushes was a nest of the veery. This nest was in ruins. That morning it had contained four newly hatched birds. While I was examining the nest, one of the catbirds flew to a bush near me, and raised an outcry to

Bee Hunting

attract my attention. I spoke to the bird, and immediately it flew to the old wall on the opposite side of the road. I went over, and saw the tail of a black snake hanging from the wall. I firmly grasped the tail, but could not pull the snake from between the rocks. I thought of a plan to get the reptile out. I pushed the tail into the wall, and when the snake had loosened his hold, by a strong pull I could gain a few inches. Twenty minutes' hard work brought the snake out so I could grasp him by the neck. He coiled around my arm with such power as to stop the circulation. It reminded me of a wire rope tightened by machinery. I unwound the coils and took my captive to a large dry-goods box. I made a cage out of another box by putting wire netting over the top. I placed the box on its side on some stakes, and introduced the snake. He tried every inch of that box and netting for means of escape. Two hours later he settled down for a good long sleep, and when he awoke he appeared contented. I offered him food, but he would not eat. For a month

"HE COILED AROUND MY ARM."

he did not eat or drink. I noticed that his skin was loose in patches. It was a month before the regular time for the black snake to shed its skin, but it was evident that this interesting event was about to take place. I put some rough rocks in the cage, and the snake pulled himself between them in such a way as to pull off the old skin. Before this, the snake was totally blind. He shed the skin over his eyes, and his sight was restored. Shortly after he had shed his skin he glided to the front of the cage and opened his mouth. I took this to mean food, and gave him a frog, which he swallowed. After this, whenever he was hungry, he would look at me with his mouth open. This snake was six feet and two inches in length, and large accordingly. His muscular power I had tested, and had found it to correspond to his size.

It is singular how many persons there are that think a snake's tongue is a stinger. My snake would run his tongue through the wire mesh, and sometimes I would touch it with a finger. At such times, the most of the

visitors present would cry: "Look out, he'll sting you!"

My snake proved to be fond of music. Evenings I would play on the flute, while he would come to the front of his cage and listen. Some tunes would excite him so he would glide about the cage. The Swiss Waltz would always set him a-going. Shrill, discordant notes would send him to the darkest spot in his cage, where he would coil and remain so quiet as to appear lifeless. On the approach of cold weather the snake became torpid, and he was killed.

Some years, snakes, of all kinds indigenous to this climate, are numerous enough to destroy the nests of the small birds. Therefore I kill the snakes that are bird-hunters, because I prefer birds to snakes. I have found that some snakes, that come to my dooryard for my pets, are so crafty as to make it nearly impossible to kill them. A big black snake often came down the hill to the cabin, and when he had reached a boulder he would look around to see if I was there writing. This snake had

a saucy, independent way of looking at me, as much as to say, "Are you the hermit?" A movement on my part toward a club sent the snake into the bushes. Throughout one season I tried my best to kill that black snake without success. The next year he did not appear. Very few snakes came out of winter quarters that spring.

Another black snake had determined to swallow a pet toad. The toad was a monster, and had escaped several times, but his hind legs were badly scarred. The toad would come to me for protection. Usually he would hop on to my feet when pursued. The snake was too crafty to come near enough for me to use my snake-club. I was telling some visitors from the city about the toad and snake, when one young lady expressed a strong desire to see a *live* snake. While we were talking, I heard the toad cry out, and I knew that the snake was after him. I told my visitors to keep quiet and they would see the toad come to me for protection. The young lady that wanted to see a live snake gathered up her

skirts and fled down the old highway. The toad came in sight, dragging the snake, which was clinging to a hind leg. When the snake saw us, he dropped his hold but did not retreat. The toad hopped on to my feet, nearly exhausted. The snake must have been made bold by hunger, for he made a rush for the toad. My snake-club was near at hand, and he was soon killed. The young lady that fled would not return until fully convinced that the snake was dead. She did not see the snake when he was alive, for she fled when I said one was coming.

A garter-snake made a home beneath my cabin. He was too small to injure birds, so I did not disturb him. He became very tame during the summer. His hole was under the door of my cabin. I could sit in the doorway, and when he was passing in or out, he would stop for me to rub his head. The second year he had increased in size. There was a chestnut-sided warbler's nest near the cabin, containing young birds. I heard cries of distress from the old birds, and when I investi-

gated, found the garter-snake trying to get at the nest. I struck him with a small stick, and he hid in the weeds. That blow severed his friendship for me. If he returned to the cabin and saw me in the doorway, he would retreat until the coast was clear. Twice more I caught him at the birds' nest. He escaped each time. He must have come to the conclusion that I was protecting the birds for my own eating, for he left them after that. The next year he ate a pet frog and robbed several bird's nests. He had moved to an old stone wall, and did most of his hunting by night. He tried to loot a catbird's nest, but the birds gave the alarm, and the moon helped me to find the marauder. One blow and it was all over. It would have been pleasant to study this snake, but I could not allow my pet birds to be so cruelly persecuted.

XII.

Cow-bird

THE INSTINCT OF THE COWBIRD

The books on ornithology tell us that the cowbird (*Molothrus ater*) is a common summer resident of New England, without regard to locality. However true this may be as to other parts, it is a fact that the bird was unknown to me in Penobscot County, Maine.

Cowbirds are summer residents of Cape Ann, and I have studied their habits for years. I commenced by requiring answers to the following questions:

Why do birds, when victimized, rear the young cowbird?

Why does the young cowbird desert its foster parents to associate with its own kind?

Why do young cowbirds lay eggs in other

birds' nests, instead of building nests for themselves?

How did the cowbird acquire this unnatural habit?

Writers on the subject usually answer the first question by the term "stupidity," and the other three by the word "instinct."

In all my life I have never found the birds stupid. They are as intelligent as to the requirements of bird life as man is as to the requirements of human life.

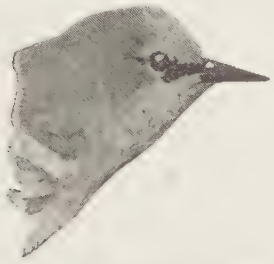
The theory of instinct is only a dream of the uninitiated. Nature's children are never troubled by such nightmares.

The most of our bird books have the earmarks of the library. An author may be familiar with a few birds studied afield, but the greater number are studied in the library. Take the cowbird as an example. One author after another rings in the same old chestnut about the disreputable bird that lays its eggs in other birds' nests and deserts its offspring. These authors wind up by calling attention to the wonderful instinct that causes the young

cowbird to desert its foster-parents to associate with its kind. I will say now, that long before I had the opportunity to study the bird, I did not believe it possible for a young bird, by its own knowledge, to hunt up and associate with birds of its kind. That would be a miracle, and the days of miracles are passed. In my study of birds I have found that old birds educate the young, and I knew that the young cowbird was piloted by its mother, or the foster-parents turned it over to its kind to be rid of incumbrances. Few writers have studied the cowbird through the nesting season. Mr. John Burroughs writes that he found small eggs in the path that had two pricks in the shell. Afterward he detected the cowbird removing an egg from a bird's nest. Mr. Burroughs intimates that the cowbird did this to deceive the owners of the nest. They, finding the proper number of eggs, would not detect the fraud. I was sincerely grieved that a delightful writer on natural history should make such a break. His interpretation would endow the cowbird with a

keen reasoning power, and would make chumps of the others; too senseless to know their own eggs. In my observations, when the victimized birds return and find the alien egg, they exhibit great distress.

My first study of the cowbird happened



BLUE-WINGED YELLOW WARBLER.

in an unexpected manner. I was watching the nest of a pair of yellow warblers (*Dendroica æstiva*) that contained two eggs. While the owners were absent I saw a cowbird flutter on to the nest and add her parasite egg to its contents. When the yellowbirds returned they at once discovered what had taken place,

and acted as if wild with alarm and distress. For a half-hour the birds flew wildly about, uttering plaintive cries, after which they settled down on a twig, where they could overlook the nest. They now seemed less excited, and were evidently holding a consultation. After awhile they seemed to agree on a course of action, for the female went on to the nest and the male bird tried to sing away the trouble, but I thought his song less earnest than usual.

No more eggs were laid, which was somewhat remarkable, as the yellowbird's number is usually four.

I found the young cowbird hatched out just twelve days after the egg was laid. The next morning I found the two yellowbirds out of the shell. When the cowbird was two days old he crowded both the little birds out of the nest. When I found them, one was dead and the other gasping as if fatally hurt. While I was watching the latter, the mother-bird appeared with an insect. She offered the food to the dying bird, and appeared greatly

troubled when it was not received. After awhile she seemed to comprehend that the little one could not eat, and she fed the insect to the cowbird. Before flying away, she returned to the gasping bird, and looked at it by turning her head from side to side, while she uttered a succession of low, plaintive notes.

Cow-bird

After this, both yellowbirds had all they could do to supply the black giant with food. When he was old enough to fly, or, at least, was completely feathered, his foster-parents coaxed him out of the nest after the manner of all bird-kind. Birds know when their young are old enough to leave the nest, and withhold food until the little ones are downright hungry, and then tempt them out with a dainty morsel. While tempting the young cowbird from the nest, the yellowbirds made as much effort and appeared as joyous when successful as if the labor had been performed for their own bright-eyed, pretty birdlings.

The young cowbird, when once out, did not return to the nest for shelter. His growing appetite taxed the strength of both birds to

Cow-bird

the utmost. Every moment of daylight was occupied in catering to his wants. One day I missed the female yellowbird, and, after a long search, found her engaged in building a new nest. She had forsaken her former charge.

Heretofore I have neglected to state that I often saw the mother cowbird. I think she visited the nest several times a day after the egg was laid. Her frequent visits had accustomed the young bird to her presence, thus making possible what followed.

After discovering the new nest, I looked up the young cowbird, and found the male yellowbird feeding him as usual, but not alone. The old cowbird was acting as assistant, as if just aroused to the responsibility of maternal duties. For several days both birds fed the young cowbird, after which the yellowbird spent much of his time with his mate, gradually deserting his charge, to return no more when the second brood was out.

Thus my observations had answered two questions; my first and second. My first

question, " Why the victimized birds rear the parasite? " was answered to my belief in this way: I believe that the yellowbirds had had experience with cowbirds before, and intelligently understood that they must sacrifice their first brood in order to raise a second brood unmolested. The actions of the birds when they discovered the parasite egg, their great distress, their consultation and prompt action, their neglect to lay the usual number of eggs can be construed in no other light. It is far beyond the province of instinct.

My second question, " Why the young cowbird deserts its foster-parents? " is already intelligently answered. It is no desertion. The foster parents turn over the parasite to its own mother, in a matter-of-fact way, and then go about their own affairs in peace.

My third question, " Why do young cowbirds lay eggs in other birds' nests instead of building nests for themselves? "

When the cowbird was out of the shell, it was big and black. It was my first young cowbird, and I thought it was a male. I

made it a male in my note-book. While the bird was in the nest I fastened a bit of copper wire to its leg, and the next spring, when it returned, I found that the bird was a female. I saw her with another female, I think it was the mother, visiting birds' nests. So the young cowbird was educated to lay its eggs in other birds' nests. Nest-building is educational and not instinctive.

My fourth question could not be answered by observation.

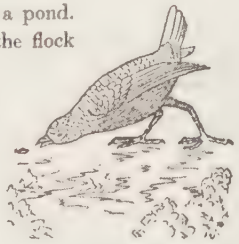
How did the cowbird acquire this unnatural habit?

The answer to this question is not within the province of proof. It is fair to assume that the cowbird, in the distant past, reared its young in a nest of its own. It may have happened that some tragedy had deprived a family of young cowbirds of their parents. Other birds may have reared the young ones until they were capable of providing for themselves. In migration all would remain together, but when nesting begun the young cowbirds would not be tolerated near a nest.

Not educated in nest building, the female would fly to other nests to drop her eggs. Other cowbirds may have adopted the same method, finding it pleasant to have the care of their babies shouldered on to servants, like some human mothers.

However, the whole thing is mere speculation, and it is not worth while to follow it further.

A few years ago a cowbird laid an egg in a chewink's nest. The chewink visited my dooryard. I did not remove the egg, but watched for the cowbird. Before the egg was hatched I shot the mother. I wanted to see if a young cowbird, reared without his own mother, would go out to the cow-pasture where there was a flock of old cowbirds. The chewinks reared the cowbird and three of their own babies. This was the first brood. When the mother chewink made a new nest, the father took care of the four little ones. Before his mate hatched the second brood, he took his charge to a bird resort near a pond. This was near the cow-pasture, and the flock



of cowbirds resorted to the pond for water. It gave the young cowbird a good chance to go with its kind. Several times I saw cowbirds approach the youngster, but he always fled as if he thought that his life was in danger. He acted just as young tame crows do when they see other crows near them. That fall all the chewinks, that is, the old ones and the first brood, with the cowbird, remained about the dooryard until migration. The second brood of chewinks was destroyed by a snake, after which the first family was brought back. The next spring the cowbird did not return with the chewinks. As a matter of fact, only two of the five chewinks returned. I suppose the others were killed in the rice-fields. I had wired the cowbird with copper wire, so looked for him in the different flocks in my locality. He was not to be found, and was probably shot because he was with the chewinks in the rice-fields.

Two years ago I found a cowbird's egg in the nest of a Maryland yellowthroat. This nest was under a tussock of cut grass, just

over a stone wall that enclosed the cow-pasture. As usual, it was the first nest of the Maryland yellowthroats. The young birds, three besides the cowbird, were crowded out of the nest, but as luck would have it they fell into a cavity on one side of the nest, and were fed by the parents. I saw the mother cowbird feed her baby before he was out of the nest, and when he could hop about, his mother led him to the cow-pasture. Afterward I saw her carry flies from the cows to her baby, which was in the bushes near the wall. I think the Maryland yellowthroats covered their own little ones from the night air. Perhaps one of them protected the cowbird. I did not see the foster-parents feed the young cowbird after he was able to leave the nest. I watched one morning for two hours, and saw the birds make many trips with insects, which they fed to their own birds. The cowbird was near at hand, over the wall, but the birds did not go near him.

From my observations I am convinced that the cowbird does not desert its offspring, but;

Cow-bird

instead, keeps an eye to its welfare, and ends by assuming the whole care of its food, and leads it to associate with its kind after it is large, or old enough to fly.

I have a little bird friend, a chestnut-sided warbler, that nests near my cabin. Three springs running I found a cowbird's egg in my little friend's nest. The first two eggs I threw out, but the third year I thought to try an experiment, the same that was afterward tried on the chewinks, and shot the mother cowbird. The cowbird was out of the shell before the other eggs had hatched. There were three eggs in the nest, and the young cowbird managed to break them. The chestnut-sided warblers had begun to feed the alien, but when they found the broken eggs, they deserted the nest and left the young cowbird to starve. They made a new nest not over three rods from the old one. I was sorry that I had shot the mother cowbird. It would have proved whether a cowbird would leave her offspring to starve, if deserted by the foster-parents.

THE INSTINCT OF THE COWBIRD

I have mentioned putting copper wire on the young cowbird's leg. This artifice was used on other birds as well. I could easily identify my birds when they returned in migration. I put two turns of wire around a young robin's leg one spring. This robin was brought up by catbirds, with my assistance. I had removed a catbird's egg to a robin's nest, and a robin's egg to a catbird's nest. The crows destroyed the robin's nest, but the catbirds reared their family. The young robin proved to be a male. He associated with the catbirds, and went South with them. He returned in the spring with the male catbirds. The females and young returned together about a week later. The young robin remained about the cabin and the little brook where the catbirds nested until the last of June. He had a favorite tree, an oak, where he would perch in the morning and attempt to sing. His song was made up from that of the robin and catbird. A curious medley. The last of June I missed the bird,

and looked for him in his favorite oak. I found his body lodged in a small hemlock beneath the oak. He had been shot while singing in his favorite tree.

Bee Hunting

XIII.

BEE HUNTING

I HAVE made my title Bee Hunting, while I remember well that down in Maine we used the term "lining bees." I was enthusiastic over the sport when farming in Maine, and when I had located on Cape Ann, I searched the wild flowers for bees. I found bees enough, so made the attempt to find a wild swarm. All my efforts were unsuccessful the first year. My bees all lined to tame swarms in hives. The second and third years I found swarms, but they did not have much honey. These wild bees were in ledges, and the ants had found the honey and had appropriated the lion's share. In Maine the bees resorted to hollow trees, mostly pine; and in the old days many farmers lost swarms, which helped to stock

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the woods. In any locality where there are large trees bees can be found, because some of the trees are sure to be hollow. The amount of honey made by a wild swarm will run from a few pounds to two hundred pounds. The size of the hollow in the tree regulates the amount of honey. If the hollow is large enough to hold the young bees, no swarm will be sent out, so a large quantity of honey will be stored.

Bee hunting is a sport that can be followed by any number of persons, without regard to sex. For pure enjoyment it is far ahead of golf. It can be followed without fatigue, and it allows plenty of time for social chats. A party could go out at ten o'clock, provided with a lunch, and could return in time for the six-o'clock dinner. The discovery of new birds or flowers might add much to the pleasure, and the uncertainty of the honey hunt would give zest to the sport.

I will briefly give the method adopted by the best bee hunters. First, as to tools to work with. A compass and a hatchet will be

necessary. The hatchet is used in blazing trees. The most important thing is the bee-box. This can be made from a wooden candy or lozenge box, with a slide. Split the box half-way between top and bottom. Place the top half on the bottom half with the slide down. Connect the two with hinges. Now you have a double box, hinged in the middle, with the upper part open. For a cover, set in a piece of glass just the right size, or you can nail on a wooden cover with a piece of glass inserted over a hole left for that purpose. It will be a good plan to make a new slide. It should be long enough to project four or five inches when closed. You will need two or three pieces of breeding comb, empty of course. You should take along a bottle containing honey and water. One-third water. About two ounces of the mixture is enough to mix at one time, as it will sour in two days. If you use clear honey the bees will take up much time cleaning their legs and wings; it is too thick and sticky for good work. A light staff five feet in length, sharp

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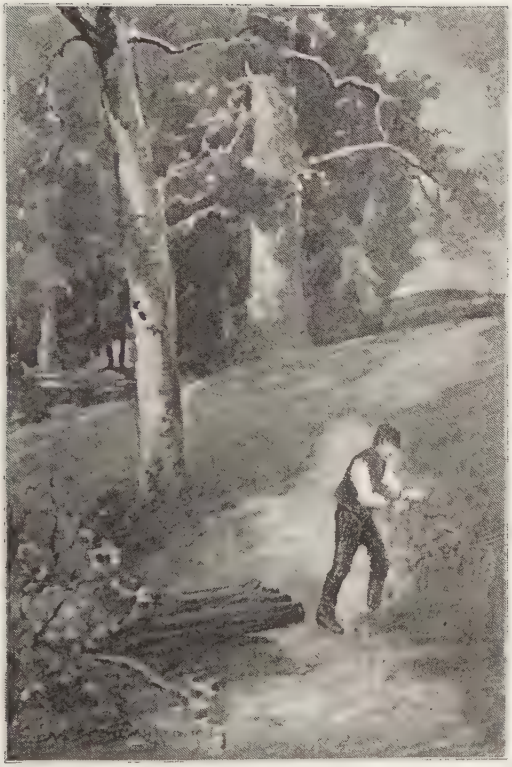
at one end and with a piece of thin board, say eight inches square, nailed to the other end, comprises your working outfit, except a good glass.

You are now ready for the field. A hilly pasture is an ideal place for bee hunting, when it is surrounded by woodland. Waste lands, where fire has killed the trees, and goldenrod grows abundantly, will be found to be the best location of all. When you get to the spot selected, set your staff into the ground ready for the bee-box. Old bee hunters seldom use a staff, but depend on finding a stump or boulder for a box-holder. The staff is handy, for you may not find a stump or boulder near shade, or a spot where one can be seated in comfort. Your box should be empty. Pull the slide out, and open the box. When you find a bee on a goldenrod or other flower, quickly place the box over him, and close it. The bee will seek the glass. Shove in the slide, and you have your first prisoner. Now you must leave the slide closed while catching your second bee. When you have



BEE HUNTING.

him in the lower part of your box, pull out the slide, and he will seek the glass with your first prisoner. Push in the slide, and you are ready for the third bee. When you have caught five you would better stop, for if you carry bees too long in the box they will refuse to work. Take the box to the staff. Put a piece of comb in the lower half. Turn on some of the mixture, then close the box. Pull out the slide, and cover the glass with coat, hat, or hand. Look every minute to see if the bees have gone down to the honey. When they are down, open the box gently, and stand back. As soon as a bee is full he will drop off the box and swing to and fro, until he thinks that he has fastened the spot in his memory. Then he will begin to circle, to find landmarks, to guide him to the hive. His circles will increase in size and height, and he will soon be lost to the eye. It is not worth while to try to follow the bee's flight at this stage. After he has made two or three trips he will drop off the box, and go directly to the hive. He has got his landmarks

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now. Other bees from the hive will soon be hunting along the line, for the first bees tell their mates of the find. If there is only a small amount of honey a few bees will seek it. Enough bees will come to remove the honey in two days. If there is a large amount of honey about all the working bees in a swarm will turn out. I have taken a basket of comb from strained honey on to a bee-line, and have had two quarts or more of bees on the comb at a time. I could walk slowly along the line, and the bees would come and go as readily as if I was stationary. It is a good plan to hang up a newspaper, or a flag of some kind, near the box. Some hunters claim that the bees will find the box by scent, so use the anise bag.

We will now return to the bee-box. There is a lot said about a bee-line, which is supposed to be a straight line, but the fact is, the bee flies in a wavy line. He drops off the box and starts for the hive, swinging from side to side of an imaginary straight line. The swings will cover about thirty feet, but

it is an easy matter to strike a centre. A bee can be seen for a long distance after he leaves the box. Suppose you are on a hill, overlooking, to the westward, a valley covered with trees, and your bees go into, or over, the woodland. Take out the honeycomb and leave it on the staff. If the box is sticky with honey, clean it with moss or leaves. Now catch five bees as before. Take them north sixty rods or more on a right angle line if possible. Place your box on a boulder or stump, and let the bees go as before. Before leaving the staff, take a good look along the line the bees are following. If you can locate a tall tree on the west side of the swamp so you may know it again, you will find it useful. When the bees get to work on the new line look for your tall tree. If the bees go to the right of the tree, the hive is not in the valley. The only thing to do now is to move to the other side of the valley if there is open land, and proceed just as you did at first. If the hills beyond the valley are wooded, you will have to follow your first line. If you

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can find the tall tree, it would be a good plan to go to it and set the compass, and begin to bush a path along the line. As you progress on the line, hunt all the trees on each side. If you can find an open spot anywhere, set up your staff and box. You might find that the bees were returning on the line, then you would know that you had passed the hive. If bees enter a piece of woods, and there is an open spot beyond, they can be started from the open spot to decide if they turn back or go on. It is unnecessary for me to go further into the details of lining. It is a poor hunter that cannot overcome obstacles that spring up in his way. When the tree is located, trouble begins. There are two ways of taking up the honey. One way is to plug the hole where the bees enter the tree, and then cut or bore a hole near the ground and insert the nose of an old teakettle filled with burning brimstone. The next day the bees will be dead, and the honey will be cool to handle. This is the method pursued by market hunters. I never took

kindly to the method. Another method followed is to put on gloves, and for the head a straw hat with wide brim. Cover the hat with mosquito-netting long enough to be buttoned under the coat. This will prove a good protection against stinging. Tie the trousers legs at the ankles, and you are ready to begin. While cutting down the tree you will have no trouble if the tree is large and the hole high up. After the tree is down, you will have to cut into the honey and split off the outside wood. The moment a blow is struck over the honey the bees will pile on to you. You will have to brush them off, or you cannot see to chop. When the store is fully exposed, the bees will give up, and will begin to load with honey. Then they are harmless, and will not sting unless jammed. As soon as the bees give up, you may remove your protection, roll your sleeves up, sit on the tree and help yourself to the choice bits. You need not feel nervous if bees are flying all about you. The fight is all out of them as soon as the honey is exposed.

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I forgot to say that when the first blow of the ax falls, after the tree is down, the fierce roar which the bees make would frighten a nervous person out of his senses. I have seen strong men cringe, and I can remember cases where fright led to flight.

Some persons are so nervous that they will not face the bees without protection. A friend that lived near my farm in Maine, came to me one morning with the story of a wild swarm of bees, which he had not been able to find, although he had at one time a line to the hive. We started out to find this swarm the twelfth day of September. The eighth was noted for wind, and thousands of forest trees had been turned up by the roots. We found some bees near a highway. They went due west into or over a bad swamp. The swamp was nearly two miles wide, with a bog on the west. The bog bordered Pickerel Pond on the south. We took some bees around the swamp to the open bog. We found that the bees kept on to the westward to a pine ridge. After hunting two hours, I

found the hive. The tree was a pine, two feet through near the ground. The gale had broken it where the bees entered and so the part with the honey in it was on the ground. About a peck of bees had clung to the top of the stub. The ground around the tree was black with bees. The tree had split open and honey was slowly running out and dropping on to the pine needles. There were over two hundred pounds of honey in that tree when standing. The bees that were carrying away honey were mostly from tame swarms, but the woods were full of bees hunting for the store. I called my friend, and while he was coming I chopped out the honey. I did not disturb the comb, only to break off some to eat. The next day we returned in a team which we left in a clearing to the north and about one and a half miles from the honey. My friend was mortally afraid of bees. He swore that they would follow him into the house and sting him. I worked on the honey, filling buckets without protection. As it was a warm day, I worked bare-armed. The bees were completely harm-

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less. My friend had on a close veil and two pairs of gloves, and all I could say had no effect. He swore the bees would sting him to death if he should remove his veil. He could not eat honey, and he was a great honey fiend. I would eat the best I could find before him, and chaff him all the time. At last he could stand it no longer. He took a sheet of well-filled comb and started up the hill. It was his idea to get away from the bees, where he could remove his gloves and veil and enjoy a feast.

Inside of five minutes I was startled by a succession of yells that appeared to extend in a line from the top of the hill to the swamp. Shortly a doleful voice called to me from the swamp. I went down and found my friend up to his hips in water. He wanted me to go up the hill and find his gloves and veil. I tried to have him come out, but he claimed that the bees had stung him until he was nearly blind. He told such a pitiable story that I believed him and hunted up his lost property. When he came to the edge of the swamp, I could

not see anything that looked like stings on his face, and told him so. He had got his gloves and veil, so he simply grinned. When he undertook to eat his honey on the hill, bees that were hunting for honey had found him, and buzzed about his ears until he was completely demoralized with fear. They would not sting any one. My friend could have worked unprotected, just as I did, but his nerves would not permit it.

There is another method of bee hunting which I must describe, or my article would be incomplete. This method is pursued late in the season, when bees cannot be found on flowers. Pressed comb is burned to attract the bees. Take some of this comb to the woods, where there is likely to be a swarm, and make a fire. Heat two or three flat rocks, and use one at a time, sizzling the comb. Have honey handy so the bees will find it when they follow the scent of the burning comb to the spot. This method is successful early in the season some years.

XIV.

TINY

In the series of nature studies, published in *Forest and Stream's* natural history columns, Tiny was briefly introduced to the public. Tiny is a red squirrel, the son of Bismarck. The latter was a grizzled old warrior, the hero of many a fierce battle. Why he gave the cabin dooryard to Tiny is one of the mysteries of squirrel life. He had held it against all squirrels, red or gray, for ten years, and now gave it over to Tiny to have and to hold, without reserve.

A return to Bismarck's life history may throw some light on this peculiar transaction.

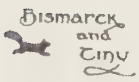
Bismarck's family, April, 1900, consisted of a wife and four children. Mrs. Bismarck, at that time, left her children to the care of

her husband, while she made a new nest in which to rear another family. It was Bismarck's duty to finish the education of the young squirrels and to marry off the daughters to young males of another family, and to locate his sons on territory which they would ever after own, and for which they would fight to the death.

Bismarck and Tiny

Tiny was not half so big as his only brother. Perhaps that was the reason why Bismarck favored him, and brought him to the dooryard. It was an unusual act, for Bismarck insisted that his sons should remain on the territory upon which he had located them.

When Tiny had acquired full possession, he proved to be a "chip of the old block." His motto, "No trespass," was impartially enforced. He raced his brother, sisters, father, mother, as well as strangers, out of the dooryard, and fiercely attacked any squirrel that did not depart after the first warning. It was laughable to see Bismarck, the grizzled old warrior, run as if for life when



caught trespassing by Tiny. When Tiny approaches through the tree-tops and finds a squirrel in the dooryard, he stops and sounds his war-cry. This cry is long drawn out, and is something like the buzzing of an old wooden clock when running down and striking the hours. After this warning, he makes a rush for the interloper, and if he catches him the fur flies.

Tiny had a lively experience with a wharf-rat. The rat was a monster. What caused him to take to the woods is a mystery. Probably he was a rat Christopher Columbus, and had started out to discover a new world.

When he found my dooryard he seemed satisfied. From a rat's standpoint it proved to be "a land flowing with milk and honey."

Wheat, corn, meat, bird-seeds, with no bloodthirsty human being to make life miserable. After two days of feasting the big fellow disappeared, to appear again three days later with a mate. Doubtless the sly old rogue thought that he was able to sup-

port a family on the fortune he had discovered in the woods.

I trapped the small rat, but found the big one too crafty to enter a trap.

At first the rat did his foraging in the night-time, so Tiny had no chance to make his acquaintance. Later he became bold enough to feed in the daytime, which, in the end, brought him in contact with Tiny. I was talking to some visitors from one of the big summer hotels, telling them the history of the rat, while he was eating from a loaf of bread in the dooryard, when I heard Tiny's war-cry. I told my visitors to look out for a hot time. Tiny ran out on a limb about six feet above the rat, and told him in vigorous squirrel language that he was a thief and a robber. The rat looked up, wondering what the angry little animal could be, that was talking in an unknown tongue, and pounding the pine-limb with his hind feet. It never entered his head to be afraid of such an insignificant foe. Tiny ran down the tree-trunk, landing on the ground not four feet from

the rat. The latter stood on his hind feet and squealed a warning.

A lady visitor urged me to drive the rat away. "Rats are great fighters," said she. "The poor little squirrel will be killed." I offered to bet on the squirrel, but before she could answer, the fight was on. Tiny caught the rat by the neck. For a few seconds all that could be seen was something brown whirling in a cloud of pine-needles. The rat soon found that his little foe was a cyclonic fighter, and he made desperate efforts to escape. He dragged Tiny to a stone wall, leaving a trail of blood behind. When he entered the wall, Tiny let go and returned to the bread and coolly proceeded to eat his dinner, none the worse for his fierce battle.

The rat did not return. He either died from the effects of Tiny's savage bites, or, if he survived, left in disgust.

Tiny was not always full of fight. He formed a friendship for a young towhee-bunting after a singular encounter. The bunting was eating from a loaf of bread,

"AGAIN THE PLUCKY LITTLE BUNTING SET ITS WINGS AND LOWERED ITS HEAD."

which was staked down in the dooryard, when Tiny appeared. The squirrel thought that the bird would run away, but instead, the latter set its wings and lowered its head in preparation for battle. Tiny was astonished. He sat up, folded his forepaws on his breast, and looked on the gamy little bunting with wide-eyed wonder. The bunting soon turned to the bread. Tiny brought his forepaws down hard on the ground, evidently to frighten the bird. Again the plucky little bunting set its wings and lowered its head. Again Tiny sat up and looked the little fellow over. This time there was a comical expression on the face of the squirrel that said as plain as words could tell that he appreciated the situation. That he admired the pluck of the bunting was evident by his action. He crept quietly to the opposite side of the loaf of bread, and allowed the bunting to eat unmolested. After this the two would eat together whenever they chanced to be in the dooryard at the same time.

Tiny did not allow other buntings near

his food, and I thought he would forget his bird friend when the buntings returned in the spring migration, but not so. He knew his friend at once, and chuckled some kind of a greeting, while the bunting said something in bird language that seemed to my ears to express joy.

The red squirrel is quick-witted and full of resources. If new and unusual conditions confront him he is equal to the occasion. I have had proof of this hundreds of times.

I will relate one instance: I feed hempseed to the birds. The red squirrels and chipmunks are fond of the seed, and unless I stand guard, will manage to get the lion's share. The chipmunks stuff their pouched cheeks, and would carry away a bushel every day if it was fed to them.

When Tiny is present, no squirrel or chipmunk dares to meddle with the food. He does not molest the birds, and I really think that he knows that the seeds belong to them.

Last fall I placed a wire netting over a shallow box, so the birds could pick out seeds,

while the squirrels could not get their noses through the mesh. The chipmunks were puzzled, and one after another gave up in disgust, to fall back on bread and corn. When Tiny found the box he got mad all through. He crowded his nose against the wire netting, biting savagely meanwhile. I laughed, and Tiny instantly stopped his efforts and looked in my direction. All at once he got the idea into his head that I had blocked his game, and had caused the trouble. In three bounds he landed on the trunk of a pine-tree, and running to a limb just over my head, he told me in wicked squirrel language just what he thought of me. In his anger he pounded the limb with his hind feet, stopping now and then to charge down the tree-trunk, as if he were about to attack me.

After ten minutes of this hot work he became quiet, except a sob, which he uttered from time to time. Finding that I would not help him, he returned to the box. He tried the wire a short time, then sat up and folded his paws across his breast and fell into a

brown study. Like a flash he came out of his trance, grasped the box, and turned it completely over, then he began to eat, saying something to me, while he jerked his tail in a defiant manner. After this, whenever he found seed in the box, he quickly turned them out. For a week or more I allowed him to have his way. I wanted my visitors to see how cute the little scamp could be on a pinch. Later I drove stakes across the box to hold it down. I returned one day to find that Tiny had managed to dig a hole beneath the box, and had gnawed through the bottom. I tried another scheme for the purpose of testing the intelligence of the squirrel. I stretched a cord between two trees, and halfway suspended a box open at the top. Tiny saw the birds eating from the box, and he quickly understood that it was another device of mine to outwit him. He ran up one of the trees, and tried the limbs that hung over the box. He soon found a slender limb that would bend under his weight and let him into the box. After he had used this highway several

"MADE HIS WAY TO THE BOX, HAND OVER HAND."

days I cut the limb away. When Tiny found a fresh stub instead of a limb, he understood what it meant. He knew that I was the guilty one, and he swore at me, if a squirrel can swear, for twenty minutes. His next move was to investigate the line where it was attached to the trees. He thought he could reach the box over the line, and started out. When about a foot from the tree, the line turned, and Tiny jumped to the ground. He tried this three times, and met with failure. The fourth time, when the line turned, he clung to it and made his way to the box, hand over hand. I thought he deserved a reward for his continued effort and intelligence, so since then I allow him to eat from the box whenever he feels like it.

Tiny made a cozy nest in November, of moss, leaves, and grass. It was in the top of a pine-tree that hangs over the cabin dooryard. Some wretch shot this nest to pieces when I was absent. I returned to find empty shells in the dooryard, and fragments of the nest hanging to the tree. Tiny made another

nest in a near-by pine, and lives in it at this time. The past two winters Tiny made his nest in my summer house. Why he did not occupy the house this winter is a mystery. Perhaps he heard me say that I should take down this house and put it into a new log-cabin that I had in contemplation.

Tiny is a widower, and childless. His wife and children were shot to death by the gunners that swarm through the magnolia woods.

I think Bismarck is dead. In cold weather he made it a practice to sly up to the cabin, just at dusk, for a doughnut or a bit of bread. For some time I have missed him. I went to his nest, to find it shot to pieces. Still farther away I found Mrs. Bismarck's nest in ruins, and silence reigned in that part of the woods.

Tiny is now an orphan, a widower, and is also childless. He occupies in squirrel life the same relative position that the hermit occupies in human life. Tiny's misfortune has brought the man and squirrel a little nearer together.

With few exceptions, writers on outdoor life make it a point to denounce the red squirrel. They claim that he is a nest-robber of the worst kind. The most of this abuse bears the earmarks of the library. One author copies after another, without knowledge of the real life of one of the most interesting wild things of the woods.

Reliable observers have related isolated cases of nest-robbing, by the squirrel, which we have no reason to doubt. I believe the thing is most unusual, and happens only when the food supply is cut off. If a squirrel in the spring is face to face with a famine, he might be tempted to kill and eat young birds. I have no record against the red squirrel, after eighteen years' observation here on the Cape. In Maine for fifteen years I saw squirrels plentiful enough on my farm. A small fruit orchard, near the farm buildings, usually harbored several squirrels. Birds nested in the trees and reared their young unless a coon cat got them before they could fly. I never knew a squirrel to molest a birds' nest, and the

farmers of that town never complained of them, so far as I know. When we farmers compared notes on bird destroyers we invariably agreed upon crows, snakes, and weasels.

I have before me a book on nature, which contains an account of the red squirrel. The author tells in a delightful way about the wild things, but some of his statements are based on imagination instead of observation. He bitterly assails the red squirrel as a nest-robber, but some things in his story lead me to think he has culled the library for his statements. This story may fit a chipmunk: "that the squirrel brought six chestnuts to his store, which he emptied from his '*cheek pockets*.'" I venture to say, that no man living ever saw a red squirrel carry six nuts at one mouthful. This squirrel has no cheek pouches like the chipmunk, and usually carries one nut, seldom two at a time. The author has his very bad squirrel come to a bad end. He was killed by five or six robins while he was carrying off one of their fledgelings. It is an excellent representation of swift ret-

ribution, but to any one who knows the fighting ability of the little red whirlwind it can be taken with a grain of salt. It would be impossible for robins enough to gather around a red squirrel to kill him. In my cabin dooryard, while I have been writing this article, a desperate fight has taken place. Ten crows, made bold by hunger, attacked Tiny and tried to take possession of a loaf of bread. The squirrel never flinched, but stood over the bread, and whenever a crow got over the dead-line, filled the dooryard with feathers. I did not interfere, but saw the fight from the cabin window. The black rogues were obliged to retreat when Tiny got downright mad. When the fight began Tiny did not try to hurt the crows. He would run at one and allow him to hop into the air and take wing. It appeared to me that Tiny was just scaring the crows away. When he found that they were in earnest, he got mad and made the feathers fly, and the crows had to leave to save their lives.

I am writing natural history just as I find

it, from observation of the wild things. To some of these wild things I am caterer, protector, and friend. They do not object to my presence when engaged in domestic affairs, so my ability to pry into their secrets is increased in ratio to the confidence accorded me. The red squirrel is one of the wild things which I have thoroughly studied because I have had the opportunity to do so. When a writer asserts that the red squirrel is a poor provider, and without family ties, I know that his observations have been haphazard, and that he does not understand the life history of the little animal of which he writes.

The male squirrel assists his mate to fill a storehouse for family use and then hides stores for himself on territory which he owns. Most observers see the squirrel hiding nuts here and there, and jump to the conclusion that he is improvident. When there are nuts the red squirrel lays up a store for his family and for himself, so that he and his family are well fed through the winter. There are no emaciated red squirrels in the spring,

which tells the story of careful provision. The young squirrels do not provide for themselves, as soon as big enough, as stated by some writers. The young born in April remain with the female through the winter. The male has a nest of his own, but if the weather is very cold he stays in the home nest with his family. The nest is intelligently constructed and the materials used are selected from supplies near at hand. Tiny's nest is made largely from moss that I use for packing. The nest is thatched with oak leaves so no rain can enter. Sometimes it happens that wood-choppers cut a tree that contains a squirrel's nest. I have examined such nests. The inside is lined with milk-weed silk and fine shreds of yellow birch bark. There is always a surplus of this soft material, which is used to stuff into the entrance to the nest. The squirrels shut the outside door to keep out the cold. I once investigated a nest in the top of a pine-tree, when the thermometer registered zero, and found the entrance packed with soft material. The squirrels

knew all about cold weather, and had made arrangements to keep the nest warm, by laying one side material to close the entrance when necessary.

When I see an unfinished dwelling-house and know that the family therein must suffer in cold weather, I think of the cozy dwelling that the red squirrel provides for his little ones, and I ask myself if the human being is the only intelligent animal in nature's catalogue?

XV.

THE CHESTNUT-SIDED WARBLER

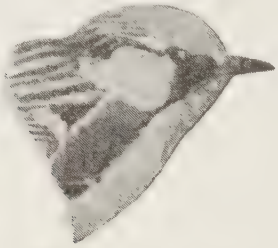
Thursday morning, May 27, 1886, a small bird hopped out of the bushes into my dooryard. The bird was a female chestnut-sided warbler. She was collecting dry grass blades for a nest.

May 27, 1897, the same little bird was in my dooryard engaged as before, collecting nesting material.

Eleven years had been credited to the past for man and bird. The man had not escaped the weight of the added years. Deeper wrinkles and gray hair told the story, but the little bird, strange to tell, was apparently as blithe and young as on that Thursday morning eleven years before.

I provide an abundance of nesting material

for all birds that frequent my cabin dooryard. The chestnut-sided warbler seemed to appreciate my motive and gave me her confidence in return. After the first year I could sit by her nest from the hour the first straw was laid to the day when the young were large enough



CHESTNUT-SIDED WARBLER.

to take wing, and she would go on with her domestic affairs without fear.

During eleven years the bird has constructed thirteen nests. Two nests were robbed by snakes and were replaced. No two of these nests were alike. All were loosely built, and with the exception of the last were

saddled on the forks of small bushes. The nest of 1897 was suspended between two shoots of a currant bush, about twenty inches from the ground. This was a new departure, and led me to have a picture made of the nest. There was a bunch of currants in the way and the bird fastened it to the side of the nest with spiders-web. The currants show in the picture.

The book informs us that the nest of this warbler is never pensile, but if the nest in my currant bush was not pensile, what may we call it? It was fastened at the brim to two upright currant stems without support at the bottom. The brim was fashioned first. It was composed of straws, shreds of cedar bark, and dry grass blades. The same material was fastened to the brim and arranged to cross, thus forming the bottom and sides. The tying material used was spiders-web and silken threads from some cocoon unknown to me. The nest was lined with fine straw and horsehair. All the nests previously made by this bird contained a lib-

eral amount of plant down on the outside. This last nest was nearly wanting in plant down, although a good supply was in the door-yard.

Several years ago the bird saddled into the fork of a bayberry bush a bunch of cotton nearly as large as a baseball, and on this foundation erected a nest.

I have records of four nests, including the last — the one in the currant bush. This 1897 nest was three and one half inches in diameter by two inches in depth inside, and three and one half inches outside. The foundation was laid May 27th, and the nest was completed June 3d. It was then deserted for three days. The first egg was deposited June 6th, and thereafter one each day until the 9th, when four eggs made up the set. The fourth egg was pure white; the other three were white with a ring of reddish-brown blotches around the larger end.

After the fourth egg was laid the bird remained on the nest nights, but during the daytime for three days spent the most of the

time gadding about. June 20th, I found one bird out of the shell and the next day all were out. The young birds are not fed until they are one day old. They are not great feeders like young robins, and the mother bird has an easy task to provide food. The birds grow rapidly. At first the mother can cover her brood while half hid below the brim of the nest, but before the young birds leave the nest she must stand with a foot on each side of the brim.

July 2d the young birds were induced to leave the nest. On that day the mother bird did not feed the young birds, and I think they must have been downright hungry. Later she tempted them with a plump insect, while the male fluttered about with cries of encouragement. Soon one hopped out of the nest on to a twig and was quickly fed. The others took the hint, and all were soon out of the nest. Most birds pursue the same method, and it reminds one of teaching baby how to walk.

My little friend has had two mates since

we became acquainted. She was made a widow by a prowling cat during the summer of 1896. The next spring she returned with a second husband. This newcomer resented any familiarity on my part. He seemed to think that I was too inquisitive, and made a great fuss every time he found me near the nest. Frequently my little friend would fly at him and drive him away. She tried to make him understand that I was a welcome guest, but he never took kindly to my presence. In return I thought him most ungrateful, for I had killed one cat and two snakes to protect his family.

My little friend holds my dooryard and immediate vicinity against all other chestnut-sided warblers. If some other bird of the same species starts a nest, the little squatter tyrant drives the interloper away. She claims sway over a circle about 200 feet in diameter, with my cabin for a centre. Catbirds, towhee-buntings and oven-birds and two ruffed grouse have nested on this claim, but for eleven

years no chestnut-sided warbler has succeeded in preëmpting the claim.

The chestnut-sided warbler is so conspicuously marked that a mere tyro in bird study cannot mistake it for any other member of the warbler family. The bright yellow crown, pure white under parts, and chestnut sides of the old birds are marks not to be mistaken. The young birds are yellowish green above and silky white below.

An amusing thing happened here some years ago over a bird of this species. A lady caller, a summer resident, asked me for the name of a bird which often visited a tree over her sitting-room window. She claimed that the bird was pure white with red wings. I could not make her understand that there was no such bird in New England. "Seeing is believing," she exclaimed, and I was invited to investigate for myself. While looking from the sitting-room window I saw the bird above my head on a twig. Sure enough, he was a white bird with red wings. It was a chestnut-sided warbler. From a distance the

effect was enough like a white bird with red wings to deceive any one not well acquainted with bird life. Looking up to the bird the chestnut sides resembled red wings.

I sent the lady into an upper room, where she could look down on her white bird, and she soon returned, and laughingly said, "I always knew that there were two sides to a story, and now I have just learned that there are two sides to a bird."

May 27, 1902, five years after the foregoing history was published, the same little bird hopped to my feet for nesting material. I gave her some cotton twine, cut to eight-inch lengths, and she carried away two pieces. She flew to a small hollow about twenty feet south of my spring. I followed, and seated on a small boulder, watched the nest building for the next two hours. I could reach out and touch the bush that contained the nesting material, but the little mother paid no attention to my presence, only to turn a bright eye on me, after she had coiled a piece of string or blade of grass in the bottom of the

nest. I think she wanted me to criticise her work. I usually told her that it was well done, and so it was. The bush was a sweet pepper bush, and the nest was saddled between the main stem and two twigs. When I first saw the nest it was but just begun. The bottom was a small wad of some gray material, which I found afterward was shreds of wool from an old gray coat that I had discarded. I placed grass and string on my knee and the bird's keen sight discovered it at once. She fearlessly hopped from a twig to my knee and examined the material. She was satisfied with the inspection and took three blades of grass to the nest. When she had coiled them, one stiff blade insisted on standing out straight. She put this in place three times, but it would straighten out each time. She flew away and returned immediately with some spider-web with which she fastened the blade of grass to one of the twigs. The male warbler swung from a twig over the nest and inspected the work. Once he pulled out a piece of string and his wife

caught him in the act, and flew at him in a great rage. I put my hand on the nest and she pecked my finger and scolded me roundly. After two hours' hard work, she was coaxed away by her mate and I returned to my writing. Day by day I watched the nest building until it was finished, seven days after it was begun. It was lined with horse-hair. The little bird spent most of the seventh day in shaping the nest. She would turn about, pressing the sides of the nest with her breast, until the whole nest was made firm and as round as an apple. The nest was deserted for three days before the first egg was laid. Four eggs, the usual number, were laid, and then I found the mother bird on the nest toward sunset. For the next three days she did what all chestnut-sided warblers do, sit on the nest nights and roam about through the day. After this I always found her on the nest until the little ones were out. I made up my mind to tame these young birds so they would come at my call. I bred some

meal worms and began to feed them to the baby birds. The mother objected at first, but after awhile she appeared to know that I would not harm them, and she would look on while I was passing the worms to the birds. After the young birds were out of the nest, and flying around in the shrubbery, I would hunt them up. One bird would come to my finger to eat, but the others were shy and as they grew older they would not remain for the proffered worm. They all drifted away to the huckleberry fields and I lost them until nearly time for migration. Then they came to the water in the dooryard to bathe. My tame bird would take flies and green worms from my hand as of old, but the three others preferred to feed themselves. When the birds returned in migration the next spring, I hunted high and low for my tame warbler but did not find him. The warblers that nest along the old road are quite tame for wild birds. They will come within four feet of an observer. They have attracted the attention

of visitors by this trait. I think many of these tame birds are the descendants of my little bird friend that for sixteen years has consecrated my cabin dooryard.

BLUE JAYS.

XVI.

INSTINCT

Instinct is the overworked and much abused word of many writers. As applied to the wild things, we often stumble on to the terms, instinct of direction, instinct of migration, instinct of song, instinct of nest building, and so on. Webster gives several definitions as to the meaning of instinct. The following covers the ground:

"An instinct is an agent which performs blindly and ignorantly a work of intelligence and knowledge."

To gather acorns in the balmy days of October and store them for the cold of winter, is a work of intelligence and knowledge. Can we believe that the blue jays and squirrels perform this work blindly and ignorantly?

If they do, then the storing of a single nut would be a miracle. Watch a red squirrel while gathering acorns and note carefully his intelligent acts. If there is a clear spot beneath the oak he drops the acorns on to it, even if he has to carry each nut from one side to the other of the tree. Note how carefully he selects the fruit: no wormy nuts are wanted. In fact, he exercises the same thoughtful care that a human being would exercise under like conditions. Does he do the work blindly?

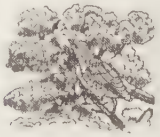
Instinct, as applied to the lives of wild animals, is such an elusive and meaningless term, that it is a pity it should be used so often by writers on natural history. The word "instinct" savors of the supernatural, and was invented in ancient times to separate man from the brute, when the lower animals were supposed to lack reason. The word "heredity" is a far better word, for it renders intelligible all of fact that the word "instinct" implies, without resort to imagination and the supernatural.

INSTINCT

It is claimed by some writers that the sense of direction is an instinct which guides birds in migration. As one writer states it: "They may be frightened and become confused, as by being frequently shot at, but once beyond the danger-line, their instinct regains control, and they will resume their journey in a direct line for their ultimate destination, and that, too, without stopping to think which way is the right way."

If this were true, if birds could launch themselves into the air and go South without thought, and, if turned aside, miraculously regain their course without a thought as to the right way, then indeed would I be forced to admit the supernatural, to acknowledge that the days of miracles were not past, but it would upset all my preconceived ideas of Dame Nature and her laws.

Really, before we resort to miracles to explain migration, would it not be well to turn to natural laws — laws that are explained by intelligent thought after careful observation?



I have ever found the birds as intelligent in relation to the needs of their lives as we are to our lives. Migration is not an exception to the rule.

If man migrates he does so intelligently. Why not grant to birds the same faculty?

For the sake of illustration we will take the swallows, birds known to all, and describe their method of migration. Remember, that the old birds have been South, that they know the way and do not doubt their ability to pilot the young birds to the new home. They also know, from experience, the perils and hardships of a long flight while battling with wind and weather. Full well they know that young birds, just out of the nest, would not last a day's flight if raw and untrained. So they intelligently proceed to train the young birds into a suitable condition. Early in the morning, after the young are fed, they are marshalled along the wires and fences and drilled in the art of flying. At first they fly in small squads, just a family group, but later they gather into companies and

practise until the companies are massed in one grand army corps. When the young birds are thoroughly drilled, that is, are hard of muscle and capable of keeping their place in the ranks, to touch elbows, as it were, the old birds are ready to lead the way South. To avoid straggling the departure is made in the night.

Up to this point we see no indications of instinct. The acts of the swallows are as intelligent as would be the acts of human beings under like circumstances. If a general had raw recruits to deal with he would drill them just as the swallows drill their raw recruits.

Perhaps the manœuvres of swallows gave mankind the idea of military tactics.

When we consider the journey of these birds South, why should we claim that their acts are guided by a supernatural power? Why not allow intelligence in flight as well as in preparing for flight?

We can readily understand how the old birds, that have made several journeys and

must be familiar with all the landmarks, may make the journey without the aid of a supernatural power.

We must remember that the sense of sight in birds is developed to a degree unknown to mankind. It often happens that I startle a ruffed grouse from its perch in the night. In such case it hurls itself through the shrubbery with amazing speed. When I think of the keenness of sight that enables this bird to avoid twigs and limbs, I know that my sight is nothing but blindness in comparison.

Some birds fly high, and the earth is like a map beneath them, with a well-defined line between land and water. Birds that are familiar with the route ought to experience no difficulty in finding the way. Even the limited sight of man would serve unless handicapped by a dark, stormy night.

Young birds left to themselves will not go South. Young robins often get left in this vicinity. They are birds of the last brood usually; the parent birds are killed before the young learn to associate with the

flocks in the neighborhood. They stay through the winter because they have no knowledge of the South and no guide to lead the way. Ducks hatched under hens from wild eggs will not go South. I once lived near a farmer that hatched out six black ducks. The farmer did not feed them, and they lived through the summer on a trout brook. In winter they huddled into a fence corner under some shrubbery. They had no instinct to send them South, although their flight feathers were perfect; but they possessed intelligence enough to seek the cattle tie-up for warmth whenever they found the door open.

It is assumed that the bee, the pigeon, and some variety of ducks, rise and circle in the air to leave landmarks "out of sight," so that this remarkable instinct may work more freely. Would it not be well to apply natural laws to these cases? Suppose we infer that these animals rise and circle to find familiar landmarks, just as a human being would act if he had the power of flight and had lost

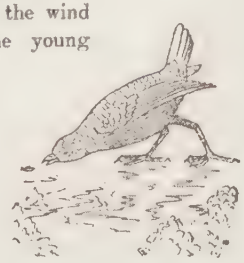
his way. Human beings climb trees, when lost, to look for landmarks. Why should we deny to bees and birds the very methods we make use of whenever the occasion requires?

As to bees, I do know that they circle to find landmarks. After years spent in hunting, or "lining bees," as we call the sport in Maine, I can speak with no uncertain knowledge. The power to circle in search of landmarks is limited. If a bee is carried too far from its hive, beyond its power to circle and find landmarks, it is lost and never returns to the hive. I have proved this time after time. The carrier-pigeon's power to circle is a most remarkable feature, but nevertheless it has its limit. Pigeons that are used for long-distance flight are trained over the whole distance in short flights, so the bird may become familiar with landmarks.

Our dogs and cats that return to us when carried sightless to a distance, may return through the sense of smell. Cape Ann fishermen tell me that dogs scent the land fifty miles at sea. If we grant to animals the power

of observation which we possess, and then take into consideration their keen sense of smell, we can account for many things that seem mysterious. However, dogs and cats are lost every day in the week.

Nest building is said to be instinctive, but I shall have to take exceptions to the statement. I do not deny that the art is hereditary, and that a young bird confined might essay to build something for a nest, but I do deny that the selection of straws is under the influence of instinct. I believe young birds examine the nest in which they are reared intelligently, and are educated by their parents in part in the selection of material. I once saw an old catbird give her young daughter a lesson in nest building. The young catbird had carried a large quantity of rootlets from my garden to a patch of catbrier. She had placed it so loosely that a good breeze would have upset the whole affair. While I was looking on wondering what the bird would do if the wind should rise, the old catbird, the young



bird's mother, happened along to inspect the work. The moment she saw the shaky structure she tumbled it on to the ground. Then she laid a foundation that no breeze could dislodge. Her selection of rootlets long enough to bridge the spaces was something wonderful. I did not see her make a mistake. If she picked up a rootlet a hair's breadth short, she dropped it for another of the right length. After she had laid a secure foundation, she left the young bird to her own skill and judgment. When the bird had completed the nest, it was as large as a four-quart measure. It was made up of varied materials. Newspaper and cloth afforded the larger amount. A departure was the skin of a garter snake woven into the brim. A few years ago I found a catbird's nest ornamented with a snake-skin, and the two instances are the only ones of all my observations.

To read some of our books on ornithology, would lead one to suppose that birds of the same species constructed nests exactly alike,

WOOD THRUSH.

but the fact is, that no two nests are alike. A bird will improve in nest building, usually, with age. I have a little friend, a chestnut-sided warbler, that has constructed twenty-three nests since I made her acquaintance. As I remember them the last nest is the neatest and most substantial. Some have been made almost wholly of rags. Chickadees have adopted cotton-batting, and call for it if I neglect to keep it in the dooryard. It often happens that birds select new material, if handy, instead of hunting the usual nest building material. If birds were guided by instinct and did not exercise reason, they would select the same nesting material year after year. The habit would be so securely fixed that the bird would not be tempted to use new material, no matter how plentiful or handy it might be. The fact that birds readily accommodate themselves to new surroundings, is proof positive that they possess the power to reason. I found a nest, last season, of the wood-thrush, which was a complete departure from the usual nest. The bulk of the

nest was composed of moss, *sphagnum*. It was placed on some bushes of the black-alder which the snow had bent down. Instead of mud the bird had used a black soil, and the nest was lined with horsehair. The horsehair, moss, and black mold were all near the nest. If I had found the nest after the young had left it, it would have proved a puzzle for me. As it was, the old bird was on the nest when I found it and so gave me the clue.

Young birds are taught to sing by the old males. This is true of the birds that have come under my observation. Even the grouse teaches the young to drum. This is done soon after dark in the fall of the year. From my hammock I often hear these lessons. The old grouse makes the woods ring with his drumming. Then he rests while the young grouse try a hand. Their efforts are not a success, and the old bird again shows them how to do it. Some nights this will go on for two hours.

There is a test that any one can try, to

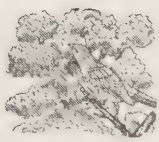
prove that song is educational and not instinctive.

Go into the woods inhabited by the wood-thrush, and sit down and listen. It will soon be evident that you have invited yourself to a bird's singing school.

In a party of summer residents from Magnolia, there was one lady who told me she had no patience with my views on song. That a bird would sing, anyway, because it had a throat adapted to song. She said that when I heard birds sing out of season, I would claim that they were teaching their young, when in fact they were only exercising their voices without a thought of teaching. When they were ready to return to Magnolia, I offered to show them a path through the woods, a new way to them. When I had reached a spot where I knew there was a family of wood-thrushes, I ordered a rest. When we had become quiet the old thrush tuned up and gave us the song. It is a short song, but loud, clear, and flute-like. There was no wind, and the song appeared to be sweeter and

louder than usual. When the old thrush had ceased, one young bird after another took up the strain. Some would give one note, others two or three notes. Some notes would be hoarse, others would be shrill. After awhile the birds would forget the lesson and drop out one after the other. When all were silent, the old thrush would again give them the right pitch and tone, and again the young thrushes tried to imitate the singer. For two hours we sat there and listened. The lady had to admit that the old bird was giving the young birds a lesson. Yet she claimed that the thrush was an exception. I was glad that she was ready to admit that one bird of a species was intelligent. I told her that when she had devoted two hours to all the other birds she would be converted to my faith.

Of all the thrushes the Hermit is my favorite. Not because he is a namesake, but for the reason that his is one of the beautiful bird-songs woven into the memory of my boyhood days. I see him here only in migration. The last of March or first of April, I see



THE HERMIT THRUSH.

the bird, and hear the sweet "Tu-le, tu-li-le." A beautiful strain, but only the prelude to the true song, which is seldom heard away from their summer home. Years ago I wrote the following description of the song of the hermit-thrush:

"To me the song of the hermit-thrush is the sweetest sound in nature. It is not a plaintive, pensive, or tender strain, but satisfies the senses and clings to the memory like the recollection of some great joy.

"I shall never forget a song I once heard in the woods of northern Maine. I was in a bark-peeling camp at the time. A rainy day had sent the crew to their homes in the settlement until the next morning; and I was left alone.

"The rain poured down in torrents. The wind howled and roared through the tree-tops, flinging great sheets of water on to the bark roof of the camp. My spirits were depressed and gloomy. Financial troubles, the loss of a cherished home, had disheartened me, and life seemed hardly worth living.

"Just before night the rain suddenly ceased. The sun burst through the clouds, and the wind completely died out. Save for the sound of dropping water, the forest was silent and solemn. A glowing sunset, painting all the clouds of the western sky, aroused me from my miserable thoughts. Just then the song of the hermit-thrush floated up from a neighboring swamp. Clear and pure the flute-like notes slowly echoed through the silent woods. The moist and hollow atmosphere magnified the slightest sound, and I could distinguish the fine trills which form a part of this famous song. '*O, phee-re-al, phee-re-al!*' represents the strain as near as I can give it in words.

"I would that I were able to express in fitting language the feelings with which I am inspired when I listen to the song of the hermit-thrush. It satisfies my sense of the beautiful as no other song can. And yet I am never quite satisfied. There is something I do not understand. Something beyond me, a shadowy mystery. After I have listened to

the strain, and while its memory still lingers, I find myself longing to know the whole secret of its charm. However, years ago I settled the matter in my mind and note-book, as the following entry will show: 'The song of the hermit-thrush is the Spirit of Nature chanting the mystery of life. When the mystery is solved we shall understand the song.'

"Day faded into twilight, and twilight into night, and still that exalted anthem solemnly pealed through the forest. It was after ten o'clock when the strain died out in a few broken notes.

"Thanks to the hermit-thrush, my thoughts were turned into a new and healthy channel. I fell asleep that night on my fragrant bed of fir-boughs, at peace with the whole world."

XVII.

THE CHICKADEES

The chickadees are with me the year through. In winter they collect into a flock and remain near the cabin, but when the snow departs, they drift away in pairs, in search of a good nesting site. From this time, until the young birds are large enough to fly, the chickadees come to my cabin in pairs. The domestic life of the chickadee overflows with love, joy, and devotion. These little birds when once mated are mated for life. There is no divorce in the bird family, from eagles down to humming-birds. It is a rare treat to watch a pair of chickadees in the nesting season. I was walking along the old highway last season, when I heard one of my chickadees calling to me. This bird had a way of

calling " Dee, dee, dee " whenever she met me in the woods. I usually carry food along, and she would come to my hand and help herself. After she had satisfied her appetite, she flew down the side-hill to Magnolia Swamp. I followed her, and found her mate excavating a nest in a small dead paper-birch. I expect that his wife told him that I was coming, but he did not quit work for five minutes. When I had approached, he bobbed his head out of the entrance, but instantly returned to his work. When he did come out, he appeared hungry, and attacked a doughnut with vigor, winding up with hemp-seed. From the way the birds attacked food, it was evident that they would have had to seek the cabin soon, if I had not happened along.

I talk to the chickadees as I would to human beings, so when I had seated myself on a boulder, within four feet of the nest, I told my friends that I was making them a friendly call, and begged them to keep right on with their work. The chickadees said something to me in reply, and may have understood

what I said to them, for they returned at once to enlarging the hole in the birch. The hole in the paper-birch, which formed the entrance, was one inch and one eighth in diameter, and round as it could well be. The depth was six inches, and the birds were at work in the bottom making the hole deeper. While the husband was eating his breakfast, the little wife was down in the hole, and I could hear the blows of her sharp bill. After breakfast, the husband flew to the entrance and called to his wife. She bobbed out and he bobbed in. Instead of resting, she occupied the time with eating hemp-seed. At the end of three minutes, the mate appeared with a piece of dead wood in his bill. He flung the wood one side, and disappeared calling his mate. She flew to the entrance, and, clinging to the edge of the hole, she reached down inside and brought up a bill-full of chippings, which she dropped outside. This was followed up until the chippings were exhausted. Then the male hammered away, while the female ate some more hemp-seed. Three minutes later he came

out for a rest, and the female took his place. The birds appeared to work under a regular system, for the little wife came to the mouth of the hole and called her husband; he clung to the edge and reached inside for chippings, just as his wife did. The bird inside must have passed the chippings up to the bird outside. Quite a scheme to save labor.

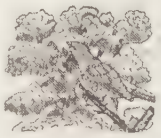
From time to time I visited this nest to inspect the work. When the hole was about nine inches in depth, the birds put in the nesting material. If these birds had not become partly domesticated, the foundation of the nest would have been moss (*Sphagnum*), with a lining of fur or grouse feathers. My chickadees have changed the nesting habit, using nothing but cotton-batting for foundation and lining. Eight eggs were laid in this nest, and every one hatched.

The flock of chickadees that have gathered at my cabin this winter for food will number about fifty. They are so tame that they enter the cabin and eat from the table. One bird has demonstrated to me that she possesses

a keen memory and an intelligence that is phenomenal. For four winters she has made it a practice to rap on the window when she is hungry, or desires to come in the cabin. Her method, followed each day, is peculiar. She raps if I am inside, and not otherwise. If I am sitting outside, she never approaches the window. It is evident that she raps to attract my attention. After rapping, she goes to the door and waits for me. If I do not respond, she returns to the window and raps again, louder than before. She waits at the door a short time, and if I do not come, she returns to the window and stays right there, and raps vigorously all the time. Not only is it peculiar that she is intelligent enough to know that she can attract my attention, but it is also peculiar that she can remember from one winter to another how to go through the intelligent act.

One of my bird-loving friends, the late "Frank Bolles," for many years the secretary of Harvard College, was telling me of the intelligence of the chickadees around

Chocorua. I told him that my chickadees could count four. Mr. Bolles laughed, and said: "I am quite a bird crank, but I think I will have to draw the line at counting. What have you for proof?" I called his attention to the method employed by the chickadees when eating hemp-seed. Not having the stout cone bill of the finch family, a chickadee was obliged to hold a seed between its toes and beat off the hull, to get at the meat. A chickadee would fly into the door-yard after a hemp-seed, then fly to a small twig, and, holding the seed between its toes, hammer away until the meat was threshed out. Some of the old birds would carry away as many as four seeds. These birds let their brains save their wings. When a bird carried away four seeds, three were usually placed in the rough bark of a limb until wanted. I fed the chickadees, and a dozen or more were soon busy taking seed from the door-yard. A pet bird, of long standing, was pointed out to Mr. Bolles as one that could count four. The bird picked up four seeds,



and flew to a limb over my head. Near the bole of the tree she deposited three seeds, and took the fourth one to a small twig, about eight feet away. Before she got through with the first seed, I pushed one of the three off the limb. Mr. Bolles scouted the idea that the bird would miss the seed on the ground. After the bird had disposed of three seeds, it hunted in the bark of the limb at first, and then dropped to the ground and found the missing seed. If two seeds were pushed off, the chickadee would hunt for both. Mr. Bolles admitted that the bird could count four, and possibly more than that number if it was necessary.

Mr. Bolles was the author of several books on outdoor life. He possessed a delightful style, reminding one of John Burroughs. I will quote from his book, "From Blomidon to Smoky," a record of a visit to my cabin:

"I have a friend who lives alone, summer and winter, in a tiny hut amid the woods. The doctors told him he must die, so he escaped from them to Nature, made his peace

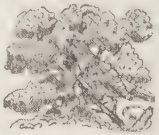
with her, and regained his health. To the wild creatures of the pasture, the oak woods, and the swamps he is no longer a man, but a faun; he is one of their own kind, — shy, alert, silent. They, having learned to trust him, have come a little nearer to men. I once went to his hut when he was absent, and stretched myself in the sunlight by his tiny doorstep. Presently, two chickadees came to a box of bird-seed, swinging from the pine-limb overhead, and fed there, cracking the seeds one by one with their bills. Then from the swamp, a pair of catbirds appeared, and fed upon crumbs scattered over the ground just at my feet. A chipmunk ran back and forth past them, coming almost within reach of my hand; soon after a song-sparrow (Wabbles) drove away the catbirds, and then sung a little *sotto voce* song to me before helping itself to the crumbs. When my friend returned, he told me the story of this song-sparrow; how he saved its life, and had been rewarded by three years of gratitude, confidence, and affection on the part of the brave

little bird. He seemed fearful lest I should think him overimaginative in recital, so he gave me details about the sparrow and its ways which would have convinced a jury of the bird's identity and strong individuality. The secret of my friend's friendship with these birds was that, by living together, each had, by degrees, learned to know the other."

The chickadees are great bird-wags. In various ways they play tricks on other birds. When there is hemp-seed in the box, the chickadees are like a lot of children turned out of school. If a tree-sparrow happens along, he takes possession by driving the other birds away. A saucy chickadee will give the danger-call, which sounds to me like "*butcher bird, butcher bird.*" The tree-sparrow darts into the bushes and the chickadees pile onto the seed-box. The sparrow finding that there is no enemy about soon returns to the seed-box. Inside of three minutes the same, or another chickadee, gives the alarm and away goes the sparrow into the bushes. This time he knows that he has been fooled, so when he

comes back he chases the chickadee through the trees around the dooryard. The chickadee is too quick for the sparrow; he darts this way and that, laughing and shouting at the top of his voice. The other chickadees do a lot of laughing and shouting too, at the same time they attend to the seed-box. The sparrow always flies away when he hears the danger-call. I suppose he thinks it better to be safe than to be sorry.

Several years ago I placed a box in the top of an oak-tree, thinking that bluebirds might be induced to nest therein. While I was nailing the box to a limb, a pair of chickadees had overlooked the work. These chickadees were old friends, and naturally thought that I was making a nest for their benefit. The next day when I had returned from the city, I found the birds engaged in carrying cotton batting into the box. These chickadees were old and had made four nests, so the selection of a box and cotton batting was a marked departure from the regular nesting habit. While the little lady was sit-



ting I made it a practice every day to climb the tree and offer her food. When I had turned the cover back the bird would flutter her wings as young birds do when begging food. But the little wife would take no food from me if her husband was present. She would call to him "*chip, chip,*" and he would hop to me for food. When he got it, he would feed his wife, while she fluttered her wings and acted like a young bird. When eight little chicks thrust up their open bills for food, the parents appeared brimful of joy and happiness. They rushed around in search of food, calling to each other all the time. I climbed the tree one day at noontime. The young birds were full grown. I took one in my hand and the mother said something to me in her language. I thought that she asked me if the bird was old enough to leave the nest. I told her it was, and the sooner they got out the better, for the nest was too small and was hot besides. That noon I went over to Cedar Swamp, and did not return until after sunset. When I had

reached the cabin the chickadees hopped to my shoulder and in heartrending bird language tried to tell me that something had happened to their babies. I climbed the tree and found the nest empty. On a boulder I had placed a pair of rubber boots to dry One of the boots was missing. Two boys had robbed the chickadees and had carried away the young birds in the rubber boot. The bereaved birds remained near the cabin all night, and I did not sleep, because they talked to me in the most pitiful language I had ever heard from a bird. The next day I traced the wretched thieves, but the little birds were dead.

Before leaving the chickadees, I wish to mention something that has impressed itself upon my mind, during the last eighteen years. That is, that the chackadees would make desirable park-birds. Compare these busy little birds with the English sparrow, and one can but feel sorry that we imported the alien, when we already possessed the native.

A flock of my chickadees, if removed to Boston Common, would thrive and increase

rapidly, and from a small beginning all the parks of the country could be stocked. The chickadees rear two broods in a season, usually eight in a brood. These birds hunt the trees for insect life, while the undesirable alien hunts the streets for indigested food. Contrast the quarrelsome "*chirps*" of the one, with the cheery "*chickadee, chickadee*" of the other. Then the mating-song. How it would fit into the glorious spring mornings. This song is called the "phebe note of the chickadee" by many writers. The only reason that explains why this name clings to the chickadee's song, is that some early writer adopted it, and later writers followed suit without taking pains to investigate. There is as great difference between the two as there is between black and white. The song of the phebe-bird is in two notes, delivered in a querulous, plaintive tone, while that of the chickadee is in three notes, as loud and cheery as the whistle of Whittier's "Barefoot boy." "*Tea's ready*," it seems to say, with the accent on the first syllable.

XVIII.

TRIPLEFOOT

I OPENED up my cabin one winter morning, at daylight, to find the dooryard covered with two inches of light snow. A mass of fox tracks centred about a piece of meat, which was nailed to the trunk of a pine-tree. When the fox left, about daylight, it went down the old highway, and this is the trail it made:

o c o o o o o c o o o o o o o

Two tracks started from a cluster near the meat, followed by a space, then three tracks followed by another space, and so on, in regular order, three tracks and a space. I had no difficulty in solving the mystery.

The fox had been trapped sometime in the past, and had regained its liberty by the loss of a foot. The space in the trail represented the missing foot. This fox was no stranger to my dooryard, and months before I had named her Triplefoot, because she travelled on three feet. She had a charmed life, for the fox-hunters had failed in their efforts to shoot her, so far, although for over a year she was the only fox in this locality, and the hounds hazed her night and day.

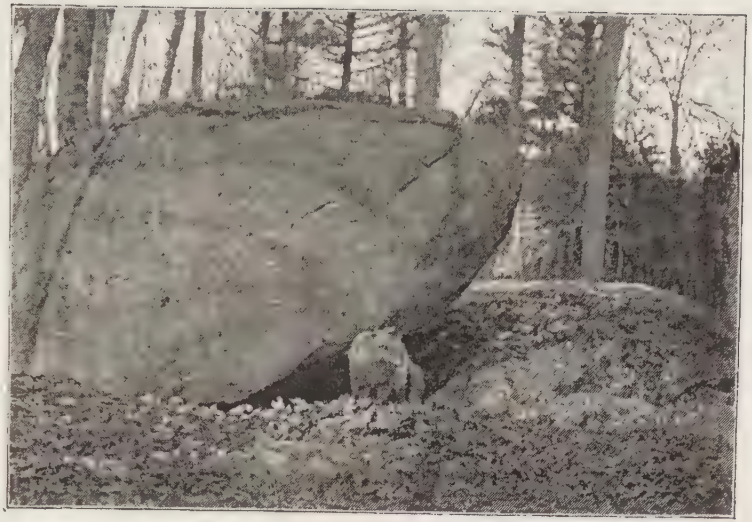
After breakfast I started on Triplefoot's trail. There was a good tracking snow, and I was determined to trail the fox to her den. The trail led down the old highway, but turned off to visit Solomon's Orchard. This was a spot containing two ruined cellars, a large clump of barberry-bushes, and some wild apple-trees, descendants of a cultivated orchard. The fox did some foraging under the barberry bushes, and a drop or two of blood on the snow indicated that she was successful in capturing a wood-mouse. While I was looking for the trail out of the orchard,

I heard two hounds give tongue, and the tone told me that they were hot on the trail. These hounds had come up the old highway, and had struck the fox's trail just south of Solomon's Orchard. Triplefoot had scented the hounds, and turned to the west, into Magnolia Swamp. I pushed my way through the dense shrubbery, the tracks of two dogs and a fox making a well-defined trail. The trail led through the swamp and over the ridge to Wallace's Pond. The trail crossed on the ice, and led me over Magnolia Avenue, just below the lily-pond. I had come to the conclusion that Triplefoot was hunting water, so as to throw the hounds of the scent. The cold weather was against her. All the brooks and ponds were covered with ice. The trail, after it crossed the road, led along the ridges to Mount Ann. From this point the fox had shaped her course to Coffin's Beach. It was a long, weary tramp, but I had enlisted and was bound to see it through.

When I had reached the sand-dunes of Coffin's Beach, I found the snow had melted

under the combined influence of sun and sand. Here Triplefoot had thrown the hounds off, and had left me out of the hunt, too. Not a track could be seen in the shifting white sand. It was an old trick of the foxes, to resort to the sand-dunes, when there was a dearth of water. There was one of two things for me to do; give up the hunt and go home, or skirt the woods for Triplefoot's trail, where she had left the beach. I decided on the latter course, and, as luck was with me, found the trail in less than ten minutes. The fox returned by way of Mount Ann and Dyke's Meadow, crossing Magnolia Swamp south of Solomon's Orchard, and took to the ridges near the old quarry. The den was under a big boulder, and, strange to tell, was only eight minutes' walk from my cabin. It was dark when I found the den, so I had thrown away a whole day looking for a thing that was in my own dooryard, so to speak.

Triplefoot reared a family during the season. In April she stored two hens and a grouse in her den, so she would not have to hunt



TRIPLETOOT'S DEN.

when her cubs were born. I saw the feathers of the fowls, and knew that the wise creature was putting food in cold storage for a day of need.

When the fox cubs were old enough to come outside and play, I put in many hours watching them with a good glass. There was no time that I saw more than three, and I think that was the size of the family. There was a flat boulder over the den, which sloped from the ground upward. I was standing on this boulder one eve, when one of the cubs came out of the den, and was in the act of climbing the ledge when he saw me. He stopped, with his forepaws on the edge of the ledge, and coolly looked me over. After he had satisfied his curiosity he went into the den, and immediately returned with one of his mates. The little imp had probably asked his brother to come out and name the comical two-legged beast. The two cubs placed their feet on the ledge and looked at me for two minutes. They were not over six feet from me, and looked as fat and stocky as two young pigs.

Triplefoot's life was one of worry and care, to say nothing about the danger from mankind and the hounds. She had to find food for her hungry cubs, and whichever way she turned, danger lurked on her trail. If she hunted for wood-mice, the hounds were there to pick up her trail. Then she had to seek water to throw them off. It would not do to go to the den, where the hounds would soon dig out her little cubs, and shake the life from their tender bodies. If she turned to some poultry-yard, the chances were that she would find herself looking into the muzzle of the farmer's shotgun. She was desperately wild, and so were the little cubs when she was with them. A warning note from the mother worked like magic. The little ones would crouch and creep to the mouth of the den, and disappear as silently as three ghosts.

I saw Triplefoot return to the den one Sunday morning, empty-handed. The cubs came out and whined pitifully when they missed the Sunday breakfast. The old fox ordered them into the den, and then took the

path for Fresh Water Cove. I knew that a large flock of hens ran in the bushes, near the highway, and Triplefoot knew it, too. In twenty minutes she was back to the den with a large hen over her neck. She called her cubs, and tore the hen to pieces, giving each cub a piece, but reserving something for herself. The dining-room was about thirty feet west of the den. It was under some small hemlocks, and the ground was level and smooth. When all the foxes had had enough, there was a small piece left. Triplefoot buried this piece under the oak leaves.

There was one thing that puzzled me in Triplefoot's way of hunting. I could not understand why she did not go after poultry every day. East, west, north, and south, there were flocks of fowls running at large, and it would be a trifling exertion to snatch one from the bushes at any hour of the day. Triplefoot may have reasoned that a fowl now and then would not be missed, while a wholesale slaughter would attract attention, and send the farmer to hunting for the den.

Triplefoot's cubs were killed that fall and winter, and she was left childless. Her mate did not den in this locality, and without doubt was shot, for Triplefoot did not rear a family the next spring. It happened during my tramps in the woods that I often met Triplefoot. She soon understood that I did not covet her glossy pelt, and she separated me from mankind in general. I have known her to remain at the den when she knew I was looking at her through a glass. She often led the hounds through my dooryard, and, if I was about, the hounds got turned off the trail.

I saw Triplefoot fool the hounds one fall. I was resting in the woods when I heard the hounds in Magnolia Swamp. I understood what was going on. Triplefoot was trying to throw them off, but the dogs had a good scent, and all her efforts were useless. Near where I was sitting there was a pine-tree turned up by the roots. The trunk of the tree was about two feet from the ground, near the roots, but the ground fell off rapidly, so

'SHE STOPPED TO LOOK AROUND, AND SAW ME."

the top, with the foliage, was over ten feet in the air. While I was listening to the hounds, Triplefoot came in sight. She passed close to the leaning pine, and kept on over the hill. There was a small pond in the valley, below, and I thought Triplefoot was going to the water to throw off the dogs. But I had erred. In a few minutes she returned, doubling on her trail. When she had reached the pine, she jumped to the tree, where it was four feet from the ground. She stopped to look around, and saw me. The wind was against her, so she had to be guided by sight. She seemed satisfied that the man was the hermit, for she went into the thick foliage of the pine top and awaited the hounds. The hounds passed by the tree without stopping, but returned after following the trail to water. Both hounds passed by the tree, to return in a few minutes. One hound had a suspicion that the tree might harbor the fox. He put his paws on the tree-trunk, and smelt along as far as he could reach, then gave it up. Triplefoot had been wise when she jumped

to the tree beyond the dog's reach. After the hounds left, Triplefoot came out of the tree and circled around me. She wanted to make sure that I was the hermit. I examined the pine-tree and found the bark much scratched, where Triplefoot had jumped on to it. The evidence showed that she had frequently resorted to the trick, to throw off the hounds. I wish I might end the story of this little three-footed fox in some happy way, but truth has ordered it otherwise. She was shot when running before the hounds, but was not immediately killed. I found her dead body while skirting Magnolia Swamp. She had crawled under a boulder, and had slowly died from her wounds and exhaustion. I buried her, and was glad that her beautiful robe and her mutilated body would not be separated in death.

THE END.

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